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BY A MAYO ROBSON, F.R.C.S. ENG.,
MEMBER OF THE COUNCIL AND HUNTERIAN PROFESSOR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; EMERITUS PROFESSOR OF SURGERY IN THE YORKSHIRE COLLEGE; AND SENIOR SURGEON TO THE LEEDS GENERAL INFIRMARY.

## LECTURE I.

*Delivered on March 5th.*

MR. VICE-PRESIDENT AND GENTLEMEN,—My first duty is to thank the Council for doing me the great honour of electing me to this important chair a second time and for permitting me to take as the theme of my lectures a subject which, though until recently considered of purely medical interest, is, as I shall hope to show, one in which surgery may lay claim to many conquests, and one which in the future is destined to become more and more surgical, from the fact of many of the diseases being only capable of relief or cure by operative treatment. My excuse for giving these lectures must rest on the experience I have had in this branch of surgery, thanks to my position on the staff of a large general hospital and to the kindness of my many medical friends, for I have operated on about 150 stomach cases and have seen a very much larger number where a question of surgical treatment arose, but in which operation was either declined or not advised. When beginning the preparation of these lectures it soon became manifest that it would be impossible to cover the whole ground of stomach surgery in the time at my disposal. I propose, therefore, to devote the greater part of the time to the so-called benign diseases and only to discuss very briefly the operative treatment of malignant disease.

### ANATOMICAL CONSIDERATIONS.

This is not the time to enter minutely into the anatomy of the stomach, but it may be useful to refer to a few facts bearing on its surgery.

The stomach varies more in size, position, and relations than any other organ in the body, for it may be so contracted, as in stricture of the œsophagus, as to be hidden from the surface and tucked up under cover of the ribs and the liver, it being then little more than a thick-walled canal; or so dilated, as in some cases of stenosis of the pylorus, as to occupy every region of the abdomen, even extending into the true pelvis. Specimens on the table illustrate these variations. Normally only a small part of the body of the stomach and pylorus are in contact with the abdominal wall, fully two-thirds lying under cover of the ribs nearly vertically. The cardiac orifice is on the left of the ninth dorsal vertebra and the pyloric sphincter on the right of the eleventh or twelfth vertebral bodies about an inch to the right of the middle line, its position on the surface of the abdomen corresponding with the angle between the xiphoid and right costal cartilages. The channel of entrance is vertical, but that of exit passes downwards, backwards, and to the right. The lesser curvature, which is directed to the right, is nearly altogether on the left of the middle line. The lower border or greater curvature lies normally well above the umbilicus and is also nearly altogether on the left of the linea alba.

On opening the stomach to explore the cardiac orifice it must not be forgotten that the cardiac end of the stomach not only extends some distance to the left of the orifice of entrance, but that it reaches quite an inch above it, like a dome, and lies under cover of the left lung. The cardiac orifice is the only fixed portion of the stomach and corresponds to the seventh left costal cartilage near the sternum. The pylorus, on the other hand, is very moveable and if fixed is abnormal. It may be at the middle line, or if the stomach is distended it may be two inches to the right of the middle line, and I have seen it lying behind the pubes. The pylorus is sometimes spoken of as the pyloric valve, but it is really a sphincter and the channel should easily admit the passage of a finger. Its patency may be ascertained without opening the stomach by invaginating a portion of the anterior wall of the stomach and pressing a finger into the channel at the time that the left hand is fixing the pylorus. If there be any growth or thickening this is readily felt at the same time. Another method of ascertaining the patency or otherwise of the pyloric orifice is to pick it up in the longitudinal axis between the index finger and thumb, when the digits will readily feel between them the pyloric ring and estimate its size and condition. In the normal healthy condition the lesser omentum readily allows the pylorus to be drawn into view and brought forward, but if there be disease the lesser omentum is frequently shortened and the pylorus fixed deeply under cover of the liver so that it can only with difficulty be exposed and manipulated. Under these circumstances an operation such as pyloroplasty may have to give place to gastro-enterostomy. The thickness of the walls of the stomach gives a good hold for sutures and renders it peculiarly amenable to surgical treatment, and the great vascularity of the organ completely does away with the fear of gangrene after the application of sutures, though at the same time its vascularity makes it specially prone to violent hæmorrhage from ulceration.

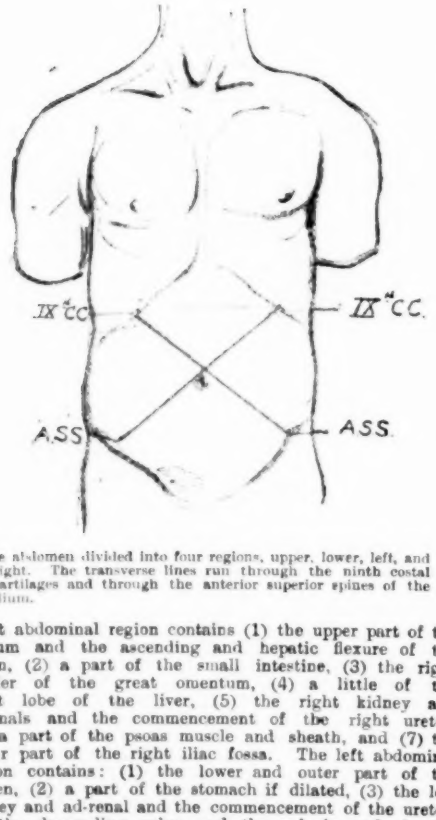
The lymphatics empty themselves into the glands situated in the free border of the lesser omentum and in front of the great vessels of the abdomen; they are of first-rate importance in cancer of the stomach when gastrectomy is under consideration, as are also the glands in the great omentum. They should always be examined before excising a growth of the pylorus or stomach, as in case of their being found enlarged a less severe operation will afford equal or even greater probability of relief than would a futile attempt to do a radical operation. The nerves of the stomach, derived from the pneumogastric and the sympathetic, are very abundant, and not only account for the very severe pain caused by ulceration but also for the severe collapse produced by injury; but it is a mistake to suppose that manipulation of the pylorus is always attended by the severe shock suggested by the experiments made by Mr. Crile, for in many cases I have freely handled the stomach and pylorus and operated on them without my patient experiencing more shock than would be expected after any abdominal operation. When the pylorus is adherent and the parts have to be much dragged on severe shock is not infrequently seen, but this is due to interference with the sympathetic nerves and other structures behind the pylorus.

The relation of the sympathetic nerves with the seventh, eighth, and ninth spinal roots accounts for the superficial tenderness of the epigastrium in ulceration and for the reflected left shoulder blade pain. This is well shown in pyloric adhesions complicating cholelithiasis where, though the pain is originally on the right, passing to the right infra-scapular region, as soon as the pylorus becomes involved in the inflammation or tied down by adhesions, the pain passes also to the left infra-scapular region.

The usual method of dividing the abdomen into nine regions is purely arbitrary and is probably continued because it has been so long in use; but the fact of there being as many as 30 different methods of subdivision shows that as yet a really satisfactory one has not been arrived at. I venture to suggest the use of two lines, from the lowest points of the right and left anterior superior spines of the ilium to the opposite costal margins at the most prominent part of the ninth costal cartilage respectively, the lines crossing near the umbilicus, thus dividing the surface of the abdomen into a right and left and an upper and a lower region, the immediate neighbourhood of the umbilicus, within a circle of two inches diameter, being known as the umbilical region. Possibly this method of mapping out the abdomen has been suggested previously; if so, I am unaware of it. It is the one to which I shall refer in my subsequent remarks. The umbilical region contains (1) the termination and division of the aorta and part of the vena cava, (2) coils of the small intestine, (3) the stomach when dilated, (4) the transverse colon when full, (5) the remains of the umbilical vein, (6) the remains of the urachus and of the omphalo-mesenteric duct (both at times patent), (7) the termination of the duodenum, and (8) the great omentum. The superior abdominal region contains (1) the liver, (2) the stomach (including the pylorus), (3) the gall-bladder and bile-ducts, (4) the spleen, (5) the duodenum, (6) the transverse colon, (7) the aorta and vena cava, (8) the solar plexus and semilunar ganglia, (9) the cœliac axis, (10) the pancreas, (11) the

lesser omentum (with the free border containing the vena portæ, hepatic artery, and common bile-duct), and behind it the foramen of Winslow, and (12) the upper part of the great omentum. The inferior region contains (1) a part of the small intestine (chiefly ileum), (2) the bladder and the lower ends of the ureters, (3) the prostate, (4) the rectum (5) a part of the sigmoid flexure of the colon, (6) the uterus and its appendages, (7) the iliac vessels, (8) the lymphatic glands, (9) the hypogastric sympathetic plexus, (10) the lower part of the great omentum, (11) the inguinal canals (with the spermatic cord in the male and the round ligaments in the female), (12) the cæcum and the vermiform appendix, (13) the lower part of the psoas muscles and their sheaths, and (14) the lower part of the iliac fossæ. The

FIG. 1.




The abdomen divided into four regions, upper, lower, left, and right. The transverse lines run through the ninth costal cartilages and through the anterior superior spines of the ilium.

right abdominal region contains (1) the upper part of the cæcum and the ascending and hepatic flexure of the colon, (2) a part of the small intestine, (3) the right border of the great omentum, (4) a little of the right lobe of the liver, (5) the right kidney and adrenals and the commencement of the right ureter, (6) a part of the psoas muscle and sheath, and (7) the upper part of the right iliac fossa. The left abdominal region contains: (1) the lower and outer part of the spleen, (2) a part of the stomach if dilated, (3) the left kidney and ad-renal and the commencement of the ureter, (4) the descending colon and the splenic and sigmoid flexures, (5) a part of the small intestine, (6) the left border of the great omentum, (7) a part of the left psoas muscle and sheath, and (8) the upper part of the left iliac fossa.

## DIAGNOSIS.

Although diseases of the stomach naturally come under the notice of the physician at first the time has passed when the surgeon may feel content to accept and act on the diagnosis already made for him by his medical colleague, leaving with the latter the responsibility of a possible error; rather, he must himself go over the whole of the medical evidence and be prepared to supplement it by surgical methods, should such be required to elucidate the case or to render possible an accurate diagnosis.

The diagnosis of any stomach case necessitates both a general and a special inquiry, the former involving the questions of age, sex, occupation, habits, mental, moral, and physical condition, and the history both of the patient and of the disease; and the latter, which is the only part which we need now consider, including all the information that the surgeon can elicit by a physical examination.

*Inspection.*—Inspection will always constitute our first effort in diagnosis and it is important that the patient should be in the dorsal decubitus, lying comfortably in a warm room with the abdomen exposed to view. Dilatation of the stomach can often be ascertained by inspection, and it may in extreme cases be seen to occupy all the five regions of the abdomen, as shown in the diagram. If the dilatation is atonic the swelling persists without visible peristalsis; but if it is due to contraction of the pylorus visible peristalsis from left to right can frequently be plainly seen. Tumours of the pylorus and of the body of the stomach are frequently visible through the abdominal wall, and in an early stage they can be seen to move downwards on inspiration; this more especially applies to cases of cancer, as in tumours depending on ulcer of the pylorus adhesions form early and fix the stomach under cover of the liver. Inspection will reveal the shallow, rapid costal breathing induced by pain at the commencement of peritonitis and by distension in the later stages, just as it will demonstrate the sighing respiration in internal hæmorrhage and the irregular catching breathing in diaphragmatic peritonitis or subphrenic abscess. It will also show the fixed and bulging ribs in subphrenic abscess and the swelling in the upper abdominal region when the pus tends to make its way forward.

*Palpation.*—Palpation immediately follows inspection, and of all methods which are adopted for diagnosis it is the one that we can least afford to omit. With the patient supine in bed or on a couch, the head slightly elevated on a cushion and the knees drawn up, the muscles of the abdomen are relaxed as much as possible. They can then easily be kept relaxed by talking to the patient so as to divert his attention. The flat warm hand placed on the abdomen at once perceives any irregularity or abnormality. If the upper abdomen is rigid it will raise the suspicion of local peritonitis, especially if there is tenderness on pressure. Should there be a tumour, its nodular character, if malignant, will easily be felt, and if it be an early stage of cancer of the pylorus it will in all probability be freely moveable. If there be malignant disease of the body of the organ it will move downwards on respiration but not freely from side to side. It will be found better, as a rule, to slide the hand over the abdomen and not to raise it from the surface, thus avoiding fresh defensive contraction of the muscles which will occur if the hand be raised and replaced on the abdomen. It may sometimes be advisable to employ gentle massage in order to elicit the presence of a tumour of the body of the stomach or of the pylorus due to muscular spasm, as in pyloric stenosis. In some cases of ulcer a distinct tumour may be present at one time, owing to the contraction of the muscular coat and absent at another, the tumour only being felt distinctly when the spasm is present. In diagnosing between atonic dilatation of the stomach and that due to obstructed pylorus the vermicular contractions felt under the palpating hand are of the first importance. Where, as occasionally happens, palpation is impossible on account of rigidity of the muscles or obesity an examination under an anæsthetic may be advisable. Bimanual examination with one hand in the loin and the other on the surface of the abdomen will frequently give increased information as to the size of the tumour. A tender and rigid epigastrium suggests ulcer of the stomach and the situation of the tenderness is frequently a good guide to the site of the ulcer; for instance, if the tenderness be under the left costal margin and the left rectus be rigid, especially if the patient be relieved by assuming the dorsal decubitus, in all probability the ulcer will be on the anterior surface; whereas if the tenderness is on the right of the middle line between the umbilicus and the right costal margin the probability is that the pylorus is the affected part. When there are symptoms of ulceration without marked epigastric tenderness and with increase of pain on dorsal decubitus, and relief is found by lying on the face, the probability is that the ulcer is on the posterior wall of the stomach. Palpation will usually bring out the character of the tumour as to smoothness, irregularity, softness, or hardness. A nodular character of the tumour, especially if associated with fluid in the peritoneum, usually indicates malignant disease. Pulsation in an epigastric tumour is often felt, and if it is due to cancer it will be non-expansile and dull on percussion. Fixation of a tumour is suggestive of perigastritis, especially if associated with tenderness, but it may also be dependent on infiltration due to malignant

disease. While palpating the abdomen it is important to distinguish between surface tenderness which may be reflected and deep pain directly due to the disease which is being sought for. A change of posture will then be useful—for instance, with the patient on the left side a pyloric tumour will frequently change its position considerably; especially is this so in the early stage of pyloric cancer. A modification of palpation is succussion, which is of considerable use in determining the presence of a splash in a dilated stomach. It may be safely asserted that if the stomach splash be obtained three hours after a meal the stomach is abnormally dilated. Palpation of the stomach may be made more distinct by distending the cavity of the stomach with air. In this way one can diagnose hour-glass contraction as well as ordinary dilatation, and can also estimate the size of the cavity or cavities. In subphrenic abscess on the right side palpation will show if the liver is depressed and this will form a link in the chain of evidence going to show that the abscess is between the diaphragm and liver and not in the liver itself.

*Percussion.*—Deviation from the normal size of the stomach can usually be ascertained by percussion, first with the patient recumbent and afterwards by mapping out the region of dulness when the patient is erect after he has drunk freely of water. After distending the stomach with air, either through a tube introduced by the mouth or by giving a dose of carbonate of soda in solution followed by one of tartaric acid, percussion readily demonstrates the outlines of the stomach and shows the position of any tumours both with regard to the orifices and to the greater or lesser curvatures; and it also enables the diagnosis to be made between a pancreatic and a stomach tumour. Percussion is also of use in demonstrating the presence of free fluid in the peritoneal cavity due to the rupture of a gastric ulcer, and for showing the absence of liver dulness under similar circumstances when free gas is present in the peritoneal cavity. It must not be forgotten that dulness in the flanks may be dependent on distension of the colon with fluid, and the similarity to free fluid in the peritoneum may be increased by change of posture increasing the dulness in the dependent area and creating resonance in the elevated area. Again, resonance in the flanks may be created by distension of the colon with gas, and excessive distension of the colon may lead to error in diagnosis by pushing the liver well under cover of the diaphragm, thus leading to the belief that liver dulness is abolished by free gas in the peritoneal cavity. I have known this to occur in a case of extra-uterine gestation which was thought to be due to the rupture of a gastric ulcer. Where a tumour is manifest to inspection or rendered evident by palpation percussion is useful in eliciting the presence of a hollow viscus in front of it, as in diagnosing between a pancreatic and a gastric tumour, for in the former case light percussion will give resonance in front of the tumour, whereas in the latter light percussion will reveal dulness and *vice versâ*.

*Auscultation.*—Auscultation is of much more importance in the diagnosis of chest than of abdominal conditions, but it is sometimes useful in demonstrating the splashing sounds in gastric dilatation and the gurgling or metallic sounds in subphrenic abscess containing gas. In the diagnosing of stricture of the œsophagus, where gastrostomy is in question, the gurgling sound on fluid reaching the stomach is usually delayed several seconds in the presence of stricture. Before performing gastrostomy for organic stricture it is of the first importance to be certain of the diagnosis. Dr. Ogston pointed out that in a healthy person food occupies four seconds in passing from the mouth to the stomach and if the ear be placed three inches below the angle of the left scapula an amphoric rushing sound is heard when fluid enters the stomach. With one finger on the pomum Adami, with the ear in the situation mentioned, and with a watch in the hand, it will usually be found, when there is stricture of the œsophagus, that 14 or 16 seconds elapse before fluid reaches the stomach. This is a valuable addition to the ordinary well-known means of diagnosis. Spasm of the pharynx or of the œsophagus at times closely resembles organic stricture; hence, before proposing gastrostomy an examination should be made with the patient anæsthetised.

*Pain.*—Though pain may be absent in some few examples it is present at some stage of the disease in the greater number of stomach ailments calling for surgical treatment, and its character and course frequently afford the most valuable means at the disposal of the surgeon for interpreting and diagnosing ailments which present few physical signs. The history of the onset of pain may show the local origin of a more general trouble. For instance, in the diffused pain of general peritonitis due to the rupture of a gastric ulcer it is of the utmost importance to know whether it was preceded by pain after food and by epigastric tenderness, so that an exploration of the abdomen may be made over the site of disease and thus a great saving of time effected in the operation. In one case of ruptured gastric ulcer that I had to operate on there were absolutely no previous symptoms pointing to stomach disorder, and thinking, from the profound collapse, the sudden onset, the presence of fluid in the abdomen, and the history of a missed period, that the case was one of ruptured extra-uterine gestation my first incision was made above the pubes. As a rule, however, the pain from perforated gastric ulcer, though ultimately diffused, will have been first felt in the epigastrium and the history will point to pain after food and probably to indigestion of long standing; there will also frequently be a history of reflected pain in the left scapular region, but in some cases of pyloric disease with adhesions to the gall-bladder and liver I have found the reflected pain passing to the right scapular region. Obscure recurrent abdominal pains may be dependent on a stricture or kink of the pylorus produced by adhesions, which though not sufficient to cause obstruction may produce considerable distress and disability. The local and reflected pains afford much help in this class of cases.

*Instrumental aids to diagnosis.*—In subphrenic abscess the exploring syringe affords useful aid in diagnosing the presence of pus and enabling the surgeon to decide on the exact site of the incision for its evacuation. Œsophageal bougies are employed in cases of dysphagia, not only for treatment, but to ascertain the site of obstruction and its nature when the question of gastrostomy arises. I prefer instruments made after the pattern of *bougies à boule* employed in urethral cases; they are not generally known but to my mind they present great advantage both in the ease and the safety with which they can be utilised and the facility with which they can be employed to dilate a stricture. Messrs. Rauschke of Leeds made my first set some years ago, and they have since copied them for other surgeons. In case of starvation from stricture of the œsophagus the question of gastrostomy has to be considered, but it must first be shown that the disease is incapable of being overcome by other means. Simple stricture is rare and may frequently be efficiently treated by dilatation. Cancerous strictures, on the other hand, cannot be safely dilated and will require other treatment. If there be a history of steady loss of flesh and gradually increasing dysphagia in a middle-aged or elderly patient malignant stricture will be suspected, and if on passing a bougie it be arrested just before entering the stomach the diagnosis is rendered very probable; but if there be slight bleeding caused by the bougie when gently used little doubt will be left. Spasm is most frequent in the pharynx, though it may occur in any part of the œsophagus. It usually occurs in subjects younger than in those who are afflicted by malignant stricture, and nearly always in women. It is, however, frequently associated with other nervous symptoms, it varies in intensity, and it usually yields to the passage of bougies without difficulty. If, however, a bougie cannot be passed in a case where spasm is suspected an anæsthetic will at once settle the doubt, as under its influence a full-sized bougie usually reaches the stomach when the stricture is due to spasm alone. Electric illumination may sometimes be useful. It is accomplished by an apparatus consisting of a small electric lamp fixed to the end of a bougie, which is passed into the stomach. If the stomach is full of water an illuminated area is seen which corresponds exactly to the limits of the organ. It is best demonstrated in the erect posture in a dark room. In this way abnormal dilatation of the stomach can be detected and a tumour appears as a dark spot in the light field. With regard to the x rays, I have found both the screen and skiagram of use in demonstrating the position of impacted coins and other foreign bodies. The gastro-endoscope has, however, not yet proved to be of any service.

*Vomited matters and the contents of the stomach.*—With regard to vomit, the first thing to consider is the quantity vomited at one time. Nurses should be trained to estimate this carefully and also to preserve specimens on all occasions. In dilated stomach vomiting usually occurs only once daily, sometimes only on every second or third day, and the quantity at one time is correspondingly large. In ulcer of

the stomach a considerable portion of the last meal may be brought up within an hour or two of its ingestion and the pain it has caused is thereby relieved. The smell should be considered. A yeasty smell is characteristic of dilated stomach; a habitually fœtid odour is characteristic of cancer of the stomach; and a feculent odour is characteristic of intestinal obstruction. Vomit is usually acid in reaction, but it may be alkaline in some cases of chronic dyspepsia or when there is much blood present. The most important abnormal constituent of vomit is blood. In large quantities its nature is obvious and the event is usually characteristic of simple ulcer, but in cirrhosis of the liver profuse hæmatemesis may occur owing to rupture of dilated veins. In smaller quantities the vomit has a characteristic dark appearance resembling coffee-grounds, and this may be due to cancer or ulcer. When the existence of blood in vomit is doubtful the most reliable guide is the hæmin test. Some of the material is filtered and the filtrate evaporated to dryness. Powder the residue and place a little on a glass slide, add a drop of glacial acetic acid, and heat gently; cover with a cover-glass, and examine under a high power for small dark-brown crystals of hæmin. A crystal of common salt is not necessary here, as there are chlorides present. In cancer of the stomach blood is frequently present in the vomit; often in small, sometimes in considerable, but rarely in large, quantity. Pus is sometimes, but rarely, vomited. In considering both pus and blood in a fluid said to be vomited it must be remembered that when large quantities of fluid are expelled from the lungs—e.g., on the rupture of an empyema into the lung or in severe hæmoptysis—the sensation to the patient is often as if vomiting had occurred. The presence of food and the absence of frothiness will help to distinguish true vomit, while vomited blood is generally much darker than blood from the lungs. But the only reliable way is to inquire carefully into the facts of the occurrence. Pus in the vomit may arise from an empyema of the gall-bladder or a pancreatic abscess, or some other abscess bursting into the stomach or œsophagus.

Examination by the microscope is of secondary importance. In dilatation of the stomach the sarcina ventriculi is frequently to be seen, together with yeast-cells. In cancer red blood corpuscles can often be found. In reference to the diagnosis of malignant disease of the stomach the relative abundance or absence of free hydrochloric acid has been pointed out as of importance by Ewald. The patient takes a "test breakfast," consisting of a cup of weak tea and a little dry toast. An hour later the stomach-tube is passed and the contents of the stomach are drawn off. These are tested for free hydrochloric acid by Gunberg's test. The reagent consists of two parts of phloroglucin and one part of vanillin in 30 parts by weight of absolute alcohol. A few drops of the filtered contents of the stomach are mixed with an equal quantity of the reagent and the whole is evaporated to dryness in a porcelain dish. If free HCl be present red crystals will form; should there be much peptone present no crystals but a red paste will result. The absence or deficiency of free hydrochloric acid occurs in several morbid states, but its presence is a strong point against a diagnosis of malignant disease of the stomach. Hyperacidity is as characteristic of ulcer as diminished acidity is of cancer. Dr. Vaughan Harley[1] advocates the estimation of the motor power of the stomach in the following way. To test the motor power Leube's meal is the best. A fasting patient is given a quarter of a pound of freshly minced meat and a little bread, and from four to seven hours later the stomach contents are examined. Normally there is no residue five or six hours after this meal. In increased gastric irritability when the motor power is increased the stomach may be found empty between the third and fourth hour. In delayed motility without pyloric stenosis there is a residue after seven, eight, or even 16 hours.

*Exploratory incision.*—In only a very small percentage of cases is simple exploratory incision as a means of diagnosis necessary or even justifiable, and there can be no doubt that in some cases it has served as a cloak for carelessness or incompetence. A careful physical examination, and time and care in studying the history of the case will usually enable either an exact diagnosis or an approximate one to be made; and in the odd case the experienced surgeon can usually say that it is one likely only to be relieved by surgical treatment, though possibly the exact pathological condition may be a matter of some doubt. Where there is doubt, and delay will not be injurious, a second or even a third examination should be made, as it is well known that at a second visit new facts may be brought to light, the patient's memory may be stirred up, and small data really important but thought by the patient or friends to be too trivial to mention at the first visit may form the key to the situation: moreover, the mind of the surgeon may on the next visit focus his attention on different points or group his data differently, and so perhaps arrive at a truer conclusion. In case of doubt a consultation is advisable, in order that the case may be considered from a non-operative point of view. It must not be forgotten, however, that the surgeon must bear the responsibility that awaits the decision, and he should be careful, if a positive diagnosis cannot be arrived at and operation is decided upon, to be able to answer two questions in the affirmative. First, Can I perform an exploratory operation without adding serious risk to the life of the patient already threatened by the disease? Secondly, Is it possible that good will result from the exploration? At times the surgeon may be called on to explore the abdomen for a tumour of the stomach which it is just possible may be removed, but where it is impossible to say beforehand whether the glands are involved or the disease has invaded the adjoining parts to such an extent that the removal of the growth would be useless. Under such circumstances, when the tumour is exposed, the great gift (usually a matter of common-sense combined with experience) of "knowing when to stop" comes in, for although having made an exploratory incision may, and probably will with due precautions, have involved no risk to the patient, any interference with the tumour may inflict such injury on the growth that the surgeon is compelled to convert his harmless exploratory procedure into one of the most serious operations which, if not causing death on the table or shortly after, can lead to no ultimate good. This is sheer meddlesomeness, and for the credit of surgery, if from no higher motive, should be avoided. Very frequently, however, it is impossible to decide what surgical operation is required until the stomach is exposed and handled. I find that I have performed an exploratory operation on the stomach on eight occasions. All were in malignant cases and the presence of glands or secondary nodules rendered further operation inadvisable. All the patients in these cases recovered. In some case of abdominal injury, either gunshot, stab-wound, or even injury without external wound, the severe shock, the vomiting of blood, and the general condition of the patient may lead to a suspicion that the stomach has been injured and an exploratory operation may be justified, since in case of rupture of the stomach such an injury, if not repaired, would inevitably prove fatal.

The following is a case in point. A youth was admitted to the Leeds Infirmary suffering from shock with vomiting of blood following on a stab-wound over the stomach. As there was free fluid in the peritoneal cavity it was thought that bleeding was going on and that possibly the stomach contents had become extravasated. An exploration showed a wound of the superior mesenteric vein with bruising but no wound of the stomach. The vein was ligatured and the abdomen cleared of blood and the patient made a good recovery.

At times all the symptoms of perforating ulcer may be present without a previous history of ulceration and all that can be said is that a peritoneal catastrophe has occurred which threatens life. Under such circumstances an exploratory operation may be required. A case of this kind came under my care where a lady was seized with violent abdominal pain at the railway station. As she became profoundly collapsed she was removed to the station hotel and was seen by a medical man who called me in. The only obtainable history was that there had been no stomach symptoms, but that the patient had missed her last menstrual period for nearly a fortnight. As there was free fluid in the peritoneum, which was thought to be blood due to a ruptured extra-uterine gestation, and as the liver dulness was present, the abdomen was opened over the pubes, when free non-odorous gas escaped, showing that the case was a ruptured gastric ulcer. The opening was therefore closed and another made over the stomach, when a perforated ulcer was found and closed and the abdomen was cleansed, the patient making a good recovery.

*Incision for exposure of stomach.*—Although incision in the middle line between the xiphoid and umbilicus gives the

[1] Practitioner, October, 1899.

readiest access to the stomach in the greater number of cases, especially if there is doubt as to what may be required, it is not always the best site, for three reasons. 1. It is apt to be followed by yielding of the scar and hernia unless long rest is enjoined after the operation. 2. The round ligament of the liver with its irregular adipose envelope is apt to be in the way and to prove confusing. 3. To prolong the incision for further investigation is inconvenient because of the umbilicus. These difficulties, of which the first only is of importance, are obviated by an incision through the inner margin of the rectus just to the right or left of the middle line. An incision on either side gives ample room; but if the pylorus is to be attacked it is preferable on the right; if gastro-enterostomy has to be done it is better on the left. Afterwards the abdominal wall is sutured layer by layer and there is no fear of hernia or a weak scar being left; moreover, there need be no fear of extending the incision if more room be required. The oblique incision along the costal margins is undesirable because it divides muscle so freely and exact repair by suture is difficult, especially in the case of the rectus, which so freely retracts, hence permanent weakening of the abdominal wall and ventral hernia are more likely to follow. As a matter of fact, with due care in applying sutures any one of these methods may be employed and the operator should select that which will give him the best access to the parts to be manipulated. Personally I prefer the vertical incision through the inner edge of the rectus where practicable.

*Gastrotomy.*—"Gastrotomy" is the term applied to the operation of opening the cavity of the stomach. It is one of the oldest operations on the stomach, having been practised by Matthis of Brandenburg so long ago as 1602 for the removal of a knife that had been accidentally swallowed. But as a diagnostic method with a view to further treatment gastrotomy is a modern procedure. Exploratory gastrotomy has only been performed within the last few years and by its means an extensive and minute examination of the interior of the stomach may be made with thoroughness and safety, so that in any case calling for operation, where by other means a positive diagnosis cannot be arrived at, the surgeon is justified in opening and exploring the stomach. It will be convenient that I should now consider the operation of gastrotomy as a whole, bearing in mind that one of its purposes may be simply exploratory. It may be performed (1) for the removal of foreign bodies from the stomach; (2) for the removal of foreign bodies from the lower end of the œsophagus; (3) for dilating a stricture of the œsophagus; (4) for dilating a stricture of the pylorus; (5) for the removal of a polypus or other tumour projecting into the stomach; (6) for exploration in case of intractable or bleeding ulcer; or (7) for curetting a cancer of the pylorus as in Bernays' operation.

The preliminary incision of the parietes has been described and for gastrotomy it requires to be rather free. Flat sponges or gauze pads should then be packed around the stomach so as to avoid soiling the peritoneal cavity. The edges of the wound having been retracted the stomach can now be palpated, and if anterior palpation affords no guide a tear may be made in the gastro-colic omentum which will admit the fingers to palpate the posterior surface. The stomach may now be drawn forward, surrounded by a sheet of sterilised gauze, and opened by a free incision in its longitudinal axis. Divided vessels must be seized and ligatured and the liquid contents of the stomach must be mopped or syphoned out or pushed into the duodenum. On retracting the edges of the gastric incision the interior of the stomach will be brought into view and may be further explored by the electric cystoscope if thought necessary, as, for instance, in hæmatemesis from a small bleeding ulcer. If the posterior wall be the affected part it may be invaginated by the fingers inserted through the omental slit pushing it forward into the wound. A tumour may now be removed, an ulcer excised, a bleeding point ligatured or cauterised, the pylorus explored and divulsed, the œsophageal opening exposed and dilated, or other treatment may be carried out. For foreign bodies in the stomach there is, of course, no need to make the omental wound, and an anterior incision may at once be made and the object seized and removed. The incision in the stomach can be rapidly closed by a continuous catgut suture for the mucous margins and a continuous silk suture for the serous edges, a few Lembert's silk sutures sometimes being applied over all for greater security; the exposed parts may then be gently sponged over, the pads or sponges removed, and the abdominal wound closed without drainage. Beyond teaspoonfuls of water for the first 24 to 48 hours all feeding is best done by enemata, and after 48 hours the amount of liquid food may be increased. Later, pultaceous food may be given, but it is better not to give solid food for a week, after which the treatment is as in any other abdominal case. Dr. Keen[2] insists on the necessity in this as in all similar operations on the stomach, of washing out the organ before it is opened, of bringing it out of the abdominal cavity, and of protecting the peritoneum by a wall of iodoform gauze. Lavage is, however, undesirable in gastrotomy for hæmorrhage.

The removal by gastrotomy of foreign bodies lodged in the stomach has been attended with considerable success. A preliminary distension of the stomach with fluid or air is neither advantageous nor desirable. The indications for operation are the presence of a foreign body which can neither be safely dissolved nor passed, and which is actually producing or is likely to produce serious symptoms. I have described in THE LANCET[3] a case in which "42 cast-iron garden nails one and five-eighths of an inch long, 93 brass and tin tacks from half an inch to one inch long, 12 large nails (some brass-headed), three collar studs, one safety-pin, and one sewing needle" were removed by gastrotomy, the patient, a girl, 12 years of age, making a complete recovery and being now in good health. (The articles named are on the table.) The value of transfusion of saline fluid in shock was well demonstrated in this case. Although the operation was not very prolonged and practically no blood was lost the patient was much exhausted from excessive vomiting before operation and was pulseless after its termination, yet transfusion restored the pulse and rendered recovery possible. Dr. A. C. Bernays described a case in which, through an incision of five inches in the linea alba, he successfully removed a table-knife from the stomach of a man who had swallowed it within an hour previously. The patient was fed by the rectum only for four days and afterwards by the mouth. Professor Loreta mentions the case of a woman who, having swallowed needles with suicidal intent, suffered severe pain. Gastrotomy having been performed, some needles were removed from the stomach and others were drawn out of the left lobe of the liver. The patient recovered without a bad symptom and was entirely freed from her suffering. Among other foreign bodies removed by gastrotomy are masses of hair forming a dense ball. The most remarkable specimen of this kind is on the table; it was successfully removed by Mr. Paul Swain. It weighs 5 lb. 3 oz. Schoff[4] has collected 16 cases of hair-ball in the human stomach, of which eight were removed by operation, all successfully. The following statistics show the mortality in gastrotomy for foreign bodies to be 15 per cent. in a series of 79 cases (in which there were 12 deaths), but the later cases show a smaller rate, and with the improved technique of to-day it will doubtless diminish considerably. Crede[5] and Fricker[6] have collected 54 cases, with 10 deaths; Heydenreich[7] has collected 13 cases, with two deaths; Schoff[8] has collected eight cases, with no deaths; and Mayo Robson,[9] A. C. Bernays, Halliwell[10], and Loreta have each recorded one case, with no death.

The following specimens from the Hunterian Museum, now on the table, show the effect on the stomach of various foreign bodies accidentally or intentionally swallowed. No. 2377 shows the remains of a knife swallowed two months before death. No. 2378 shows the blades and iron portions of three or more clasp-knives swallowed by a man and voided per anum; the man recovered. No. 2379 shows the stomach from a married woman, aged 41 years, who had suffered from hæmatemesis at 17 years of age and several times later; ultimately three weeks' incessant vomiting led to death. A post-mortem examination showed the pylorus behind the pubes, the duodenum being distended by a mass of pins weighing nearly a pound and causing obstruction. There were no peritoneal adhesions. The bent pins removed from the last specimen are shown in No. 2380. No. 2381A shows a roll of black human hair 12 inches long and

[2] Philadelphia Medical Journal, May 7th, 1898.
[3] THE LANCET, Nov. 3rd, 1894, p. 1028.
[4] Wiener Medicinische Wochenschrift, Nov. 16th, 1899.
[5] Archiv für Klinische Chirurgie, 1886.
[6] Deutsche Medicinische Wochenschrift, 1897.
[7] Semaine Médicale, 1891.
Wiener Klinische Wochenschrift, Nov. 16th, 1899.
[9] THE LANCET, Nov. 3rd, 1894, p. 1028.
[10] THE LANCET, Dec. 23rd, 1899, p. 1732.

weighing 5 lb. 3 oz. removed from a girl, 20 years of age, by Mr. Paul Swain [11]; the patient recovered.

Gastrotomy may be performed for the removal of foreign bodies impacted in the lower end of the œsophagus when all attempts to recover them by the mouth have failed. At the American International Medical Congress Dr. Maurice H. Richardson [12] read a paper on the Possibility of Operation on the Œsophagus through the Stomach. He had verified his statements by experiments on 60 bodies and had in one case operated successfully on a man, 37 years of age, who had 11 months previously swallowed a denture of four teeth which had become impacted at the lower end of the œsophagus. The patient had lost 50 pounds in weight and it was found to be quite impossible to extricate the plate by means of forceps introduced through the mouth. After the stomach had been opened the hand was inserted; on reaching the cardiac opening the finger discovered the plate about two inches above the diaphragm. By means of digital manipulation it was detached and withdrawn. The stomach was then carefully sutured and the abdomen closed. The patient rapidly gained weight and was soon able to resume his work. The conclusions Dr. Richardson arrived at from experiments were: that the oblique incision below the rib margin is the best; that the stomach, after being withdrawn from the abdomen a little, so as to avoid soiling the peritoneum, should be opened to the right of the convexity of the lesser curve; that the assistant should by traction on the stomach put the lesser curve on the stretch; and that the sulcus so formed is always a certain guide to the cardiac orifice. When a foreign body is impacted in the cardiac orifice it is about six inches below the opening made in œsophagotomy; and if it be firmly impacted and requires much force to detach it the safer plan will probably be to perform gastrotomy and draw it downwards a little way than to perform œsophagotomy and draw it forcibly a distance of six inches past very important structures. Dr. Ball of New York [13] recorded an operation in which he successfully detached an impacted peach-stone from the lower end of the œsophagus in a thin boy, aged 16 years, and then by attaching a piece of string to a sponge and dragging the sponge upwards from the gastrotomy opening to the mouth he was able to bring the stone with it.

Gastrotomy as a preliminary to forcible dilatation of the pyloric or cardiac orifice of the stomach was suggested by Richter and put in practice by Loreta in September, 1882. In stenosis of the pylorus divulsion has given way to pyloroplasty for the double reason of pylorodiosis having a greater death-rate and of its being liable to be followed by relapse, though it may yet be advisable in those cases of stenosis due to spasm and hypertrophy of the pyloric sphincter and in those milder forms where the sphincter may be dilated without gastrotomy by invaginating the stomach wall and gradually pushing the finger through the pyloric opening. The subject will be more fully considered under simple dilatation of the stomach.

In simple cicatricial stricture of the œsophagus near the cardiac orifice, if dilatation by bougies is impossible or has failed to keep open the stricture, the operation of gastrotomy may be performed and an attempt made to dilate the orifice from below. The operation has proved very successful. Gissler [14] has collected 10 cases and Kendal Franks 21 cases, all the patients recovering. The operation may be performed in one or two stages; in the latter case a large gastrotomy opening must be made and the dilatation proceeded with later. The one-stage operation is to be preferred, as the finger can then palpate the cardiac orifice and a mechanical dilator may be used if necessary. For subsequent operation the gastric fistula may be left if it be thought that there may be a difficulty in keeping the passage patent by bougies introduced through the mouth. The dilator that Loreta employed was after the pattern of Dupuytren's lithotomy dilator, only longer and incapable of dilating beyond five centimetres. Kendal Franks used an Otis's urethrotome from which the knife had been removed. Weiss's rectal dilator may be conveniently employed. Abbé has recently devised a method of dividing a simple stricture of the lower end of the œsophagus or of the cardiac orifice of the stomach by passing a string through the stricture from below until it emerges at the mouth, then by putting the string on the stretch and running it rapidly upwards and downwards the stricture is soon divided. The stomach and the abdominal openings are then closed and the stricture is kept permeable by the regular passage of bougies. The diagnosis is of the first importance, as in malignant disease the operation will be useless. In simple stricture of the cardiac orifice there will probably be a history of corrosive fluid having been swallowed some time previously and the symptoms will also be of longer duration than if the stricture be malignant.

Gastrotomy for the removal of a polypus or other growth projecting into the cavity of the stomach or occluding the pylorus is an operation seldom required, since simple tumours of the stomach are uncommon. The following is a good example. A middle-aged man with a long history of dyspepsia and loss of flesh came under my care for dilated stomach, which was producing the usual symptoms. The pylorus appeared to be thickened and on opening the stomach the lumen of the pylorus was seen to be occupied by a polypoid projection with a wide base, so that the passage of the stomach contents onward was almost completely prevented. The removal of the growth by scissors and the suture of the longitudinal wound transversely led to such relief that the patient gained weight at the rate of half a pound a day, and in three months he weighed between two and three stones more than before operation. The growth proved to be an adenoma. The specimen is on the table. Chaput [15] reported a case in which he excised a pedunculated adenoma from the posterior wall of the stomach, and C. B. Lyman [16] reported a case of removal of a pedunculated carcinoma of the stomach through a gastrotomy opening. Mr. Bennett [17] reports an interesting case of the kind where the removal of a simple papilloma that occluded the pylorus from time to time and led to intermittent dilatation cured the patient, a man, 35 years of age, who had been ill for four years.

Gastrotomy for exploration in the case of intractable gastric ulcer not yielding to ordinary treatment will be considered more conveniently when we discuss ulcer of the stomach.

Gastrotomy for partially removing cancerous growths in the stomach by the curette is an operation that has been performed by Dr. Bernays of St. Louis. He has recorded [18] some cases in which he had given relief by this method, but in view of the better results from gastrectomy or gastroenterostomy it is scarcely likely that this operation will continue to hold a place in surgery, both from its uncertainty and from the danger of hæmorrhage and perforation; moreover, the relief given by the operation can only be of a very temporary nature.

## GASTRIC ULCER.

Although in its earlier phases gastric ulcer comes under the care of the physician, many of the complications to which it gives rise demand surgical intervention and, in fact, can only be treated satisfactorily by surgical means. According to Brinton and Welch ulcer of the stomach occurs in 5 per cent. of all necropsies. According to Lebert, as quoted by Dr. Dreschfeld, death occurs in 10 per cent. of all gastric ulcers, 6½ per cent. occurring from perforation and 3 per cent. from hæmorrhage. Habershon says that perforation occurs in 18 per cent. of all cases of ulcer of the stomach and Brinton in 15 per cent., to which must be added the mortality of fatal hæmorrhage, which, according to Müller, occurs in 11 per cent. of all cases of ulcer, the average of all authorities being 5 per cent.; so that allowing 15 per cent. to represent the mortality from perforation and 5 per cent. that from hæmorrhage, the mortality of gastric ulcer treated medically is at least 20 per cent. But Tricomi [19] gives even a larger mortality as an argument in support of his views to treat all obstinate cases of gastric ulcer surgically; and Brinton gives the mortality from all causes in gastric ulcer as 50 per cent. It is quite unnecessary that I should enter into the numerous theories which have been advanced as to the causes of gastric ulcer or give a detailed account of its pathology, I shall therefore confine my remarks to such points as I consider have a surgical bearing.

For the present, passing over malignant, tuberculous, and syphilitic ulcers, the special form of ulcer which produces

[11] THE LANCET, June 22nd, 1895, p. 1581.
[12] Boston Medical Journal, Dec. 16th, 1886.
[13] New York Medical Journal, Oct. 28th, 1897.
[14] Beiträge zur Klinischen Chirurgie, Tübingen, 1892, vol. viii., p. 109.
[15] Bulletin et Mémoire de la Société de Chirurgie, 1894.
[16] Annals of Surgery, 1886.
[17] Brit. Med. Jour., Feb. 3rd, 1900.
[18] Annals of Surgery, December, 1887.
[19] Riforma Medica, Feb. 3rd, 4th, 5th, and 6th, 1899.

the complication calling for surgical treatment is the simple ulcer of Cruveilhier, which may be classified according to its stage and size, and to this may be added the simple erosion of the mucous membrane described by Dieulafoy which at times leads to serious or even fatal hæmorrhage. There appear, however, to be clinically two distinct forms of ulceration of the stomach—the acute and chronic; but although they seem to be separate and characteristic there are so many intermediate stages that it is a question whether or not the ulcers are as distinct as the extreme varieties would seem to indicate.

The acute ulcer is usually small and round and has the appearance of being punched out of the stomach wall; the chronic ulcer may be very large and has shelving or irregular margins. The chronic ulcer occurs chiefly in men. Dr. Seymour Taylor gives the proportion as 72 per cent. in males and 28 per cent. in females. It is a disease of middle or advanced age rather than of youth, though I have operated for perforation from chronic ulcer in patients as young as 21 years. It is usually situated near to or at the pylorus, but may spread and form a tumour of the stomach extending along the lesser curvature, and it may occur in other parts of the stomach than the pylorus. It is irregular in outline and surrounded by well-marked thickening of the outer coats of the stomach. It frequently leads to adhesions, hence it is less liable to be followed by perforation into the peritoneal cavity, though it may eat its way into neighbouring organs. It is frequently followed by pyloric contraction. If bleeding occurs it is usually less in quantity than in the case of the acute ulcer, but the bleeding may be severe or even fatal. The characteristic symptoms of ulcer of the stomach, pain and vomiting, may be absent until some complication supervenes, though usually they are sufficiently distinct. The pain frequently occurs from one to two or more hours after food. There is usually tenderness over the pylorus or between the xiphoid and the right costal margin. Vomiting is very irregular, but when present is characteristic. The vomit is often large in quantity, containing much mucus, and it is sometimes grumous or coffee-ground; it is often fœtid, and if there be dilatation there will be signs of fermentation with sarcinæ on microscopic examination. The symptoms vary very much and may disappear for weeks together. I have observed and operated on cases where the symptoms had been going on for five years, seven years, 15 years, and 17 years with more or less long intervals when the symptoms were in abeyance. Dilatation of the stomach is a frequent complication and is dependent on pyloric contraction the result of cicatrisation. Loss of flesh is well marked, especially in the later stages, and may be extreme, extending to half the body weight. Tumour of the pylorus is frequently present and may resemble malignant disease.

The chronic ulcer is usually single and very irregular and in its deeper parts it often appears funnel-shaped. The simple, acute, or perforating ulcer occurs chiefly in women and often in young single women. It seems to be associated in many cases with amenorrhœa and chlorosis. The site varies, but it is frequently found near the cardiac end and near the lesser curvature, though it may attack either curvature or either surface. The shape is constant, it being clean punched out and round, with little or no inflammatory exudation around it. It is frequently followed by severe and sometimes fatal hæmorrhage. Pain at the epigastrium, passing to the left infra-scapular region, comes on directly after food and is associated with local tenderness at the mid-line or on the left of the superior abdominal region. Vomiting is irregular, usually after food, and often without blood. If there be bleeding it is usually free, seldom simply grumous. Perforation is common and the ulcers may be multiple.

*Complications.*—Although the following complications are common to both forms of ulcer certain of them are much more common in one than the other. For instance, the acute round ulcer is more frequently followed by violent hæmorrhage and by perforation than the chronic ulcer, yet the chronic ulcer is also liable to be followed by both. On the other hand, the chronic ulcer is more frequently followed by cicatricial contraction of the pylorus with subsequent dilatation of the stomach and by perigastritis leading to disabling adhesions, also by hour-glass contraction, fistula, and tumour of the pylorus or of the stomach, serious atonic motor deficiency, severe gastralgia with uncontrollable vomiting, cancer of the pylorus, tetany, chronic pancreatitis, abscess of the liver, chronic hepatitis, profound anæmia (resembling the pernicious form), stricture of the bile-ducts, jaundice, catarrh of the gall-bladder, and other complications depending on invasion of the neighbouring organs. Both forms are accompanied by pain, by great loss of flesh and strength, and at times by subphrenic abscess. It will be at once perceived that surgery is intimately concerned with and is in fact the only effectual treatment in many of these complications, some of which I propose to treat in detail.

*Diagnosis.*—The well-known symptoms of pain after food with vomiting and bleeding as shown by hæmatemesis and melæna are usually sufficiently characteristic of gastric ulcer, and in the present lectures it is not necessary that I should enter very minutely into the question; but no surgeon can afford to pass over the diagnosis, which he must confirm personally before deciding on the question of surgical treatment. Doubtless before he sees the case it will have been settled that the patient is not suffering from simple gastralgia due to anæmia and hyperæsthesia of the stomach, owing to the absence of localised tenderness and of hyperacidity of the gastric juice as well as from the irregularity of the vomiting and pain which may occur independently of meals, but he may be called on to negative cancer of the stomach which will usually be indicated by the presence of a tumour, the absence or diminution in quantity of free hydrochloric acid in the vomit, the presence of coffee-ground vomiting and of cachexia, and the occurrence of the disease usually at or after middle life. The diagnosis between gall-stones and ulcer will usually be indicated by the irregularity of the paroxysms of pain, which in gall-stone colic occur quite independent of food, by the character and site of the pain, the presence of jaundice and the character of the vomiting, which in cholelithiasis usually comes on soon after the pain begins and persists long after all food has been rejected. To diagnose between ulcer of the duodenum and ulcer of the stomach, the occurrence of the former more frequently in men and after middle age, the presence of melæna with or without hæmatemesis, the pain occurring from an hour to two hours after food and the tenderness on the right of the abdomen will usually be sufficiently characteristic.

I would here point out as bearing on the site of the ulcer the importance of the character and site of the pain, which in an ulcer of the stomach is usually definitely localised and associated with tenderness on pressure. The tender area is in the upper abdominal region, the position being more or less to the right or left of the middle line, according to the site of the ulcer. For instance, an ulcer on the anterior surface of the stomach near the cardiac end is usually associated with tenderness between the left costal arch and the mid-line, and relieved by the dorsal decubitus, but if the pylorus be involved the tender spot is between the right costal arch and the mid-line and the pain is relieved by lying on the left side and increased by turning to the right. An ulcer on the posterior wall of the stomach gives rise to less epigastric tenderness and the pain is felt more in the back beneath the left scapula or close to the spine opposite the attachment of the tenth and eleventh ribs. If adhesions have formed between the pylorus and liver or gall-bladder the pain may radiate towards the right infra-scapular region. When the ulcer is on the posterior wall the dorsal decubitus increases the pain which may be relieved by lying on the face or leaning forward, or even by assuming the erect posture. In all cases of ulcer the pain is usually increased by food, but the time of the onset of pain after eating is significant. For instance, an ulcer close to the cardiac end of the stomach causes pain immediately after food has been taken or the pain may even start as the food is being swallowed; whereas in ulcer of the pylorus the pain frequently does not occur until from half an hour to an hour and a half after meals. If the pain is very severe vomiting frequently occurs, sometimes immediately after food, at others not for an hour or two, and the act of vomiting usually gives immediate relief.

With regard to hæmatemesis, which is said to occur in about 80 per cent. of cases of gastric ulcer, and melæna, which is usually associated with ulcer, but sometimes occurs without hæmatemesis, they will be considered later, for hæmorrhage is one of the important complications on which the mind of the profession, so far as treatment is concerned, is not yet by any means crystallised.

Latent ulcers are not uncommon. Savariaud gives their proportion as 20 per cent. of all cases of gastric ulcer. It is said that such ulcers are always of the acute round variety, but my experience, in two cases where I have had to operate for perforation without any previous symptoms pointing to

ulceration, would lead me to form a different opinion, for I found in both considerable thickening around the ulcers, showing that the disease must have existed in a latent form for some considerable time. It is difficult to explain why some of these ulcers should exist without producing symptoms until either perforation or violent hæmorrhage occurs. In the cases I have seen the ulcer has been near the lesser curvature of the stomach and this might possibly afford an explanation, as in this situation they would be brought less intimately in contact with food.

The following specimens from the Hunterian Museum illustrate various forms of ulcer of the stomach:—No. 2395 is a characteristic example of simple chronic ulcer of Cruveilhier or the perforating ulcer of Rokitansky from a girl, aged 17 years; it is situated two inches from the cardiac orifice in front. No. 2395A is an acute ulcer from a woman, aged 20 years, which caused death from perforation in 40 hours. The perforation is very small on the anterior wall close to the middle of the lesser curvature and there is another ulcer nearer the cardiac orifice. No. 2396 is a perforating ulcer causing death in a lady, aged 22 years. No. 2400 shows some multiple round ulcers. No. 2392 is an ulcer near the pylorus in a child of five years of age who died 40 hours after an extensive burn. No. 2393 is a specimen from a woman who died from cancer of the breast; the stomach shows numerous small round and oval ulcers (hæmorrhagic erosions). No. 2398 is a pyloric ulcer showing a small perforation, and another less deep causing contraction of the pylorus. It is from a male subject. No. 2399 is a chronic ulcer of the posterior wall eating into the pancreas. No. 2402A is a chronic ulcer showing puckering and contractive result of healing. No. 2402B is a chronic ulcer showing a large ulcer three and a half inches by one and a quarter inches on the posterior wall adherent to the pancreas and the liver. No. 2414 is a pyloric stenosis from ulcer, with doubtful secondary growth. No. 2415 is a pyloric stenosis with hypertrophy of the stomach. No. 2391 shows a very small universally ulcerated stomach five inches long and six inches in the greatest circumference, with the coats from three to four lines thick, taken from an old gentleman, aged 70 years, who was accustomed to take up to two drachms of wine of colchicum for gout. For nine months before death although he abstained from colchicum he had incessant pain and vomiting.

## TREATMENT OF GASTRIC ULCERS.

The treatment of simple ulcer of the stomach is at first essentially medical and when properly carried out is usually satisfactory. Unfortunately, however, in many cases treatment is stopped as soon as relief to pain is obtained and long before the ulcer is healed. I have nothing to say concerning the details of medical treatment since it is out of my province, but I would urge most emphatically that the absolute treatment advocated in the medical text-books should be carried out more systematically and for a much greater length of time, and that it should not be left off as soon as the ulcer has got to the painless, otherwise the healing, stage. Doubtless this too brief treatment is most frequently due to the impatience of the patient, but I feel sure that in hospital practice it is often due to pressure on the beds and to a desire to make the most out of them, and in private practice it is frequently due to thoughtlessness and perhaps sometimes to ignorance of how long it takes to secure healing of a gastric ulcer.

The surgical treatment of intractable ulcer of the stomach is still *sub judice*. The first operation for the cure of ulcer of the stomach was performed in 1881 by Rydygier, who resected successfully a large ulcer from the posterior wall of the stomach. In 1882 Czerny repeated successfully a similar operation and in the same year Van Keef also succeeded in a like case. After other cases of excision Doyen, in 1893, introduced the operation of gastro-enterostomy for the treatment of gastric ulcer, and at the German Congress of Surgeons in 1895 he reported 21 cases in which he attributed the relief or cure of ulcer of the stomach by gastro-enterostomy to the rest induced by the operation. Czerny, Monod, Durivier, Kuster, Novard, Tricomi, myself, and many others have followed on the same lines. Besides excision and gastro-enterostomy, pyloroplasty, pylorodiosis, and pylorectomy have all been employed in the radical treatment of gastric ulcer, but the latter operation only where pyloric contraction with tumour had developed. In England, perhaps, some of us are not yet prepared to subscribe fully to the views of Tricomi,[20] who

[20] Riforma Medica, February, 1899.

TABLE I.—*Cases of Gastric Ulcer treated Surgically (excluding Complications of Hæmorrhage and Perforation).*

| Name of surgeon operating or compiling case. | No. of cases | Operation. | Remarks. | Recovered. | Died. |
|---|---|---|---|---|---|
| 1. Rydygier (1881). | 2 | Excision of ulcer. | Ulcer on posterior wall of stomach. | 1 | 1 |
| 2. Czerny (1882). | 1 | ,, | ,, | 1 | — |
| 3. Van Keef (1882). | 1 | ,, | ,, | 1 | |
| 4. Schuchart (1895). | 1 | ,, | Death in second week from another ulcer. | — | 1 |
| 5. Mikulicz. | 4 | — | — | 2 | 2 |
| 6. Comte. | 38 | — | Of these, 17 cases of excision of ulcer with six deaths. | 29 | 9 |
| 7. Doyen. | 21 | Gastro-enterostomy. | — | 21 | — |
| 8. I. Berg. | 10 | Pylorectomy, excision of ulcer, pyloroplasty, and gastro-enterostomy. | All these cases were associated with thickening of the pylorus. | 10 | — |
| 9. Tricomi. | 50 | 21. Operated on by Tricomi. | Dr. Tricomi claims only one death, but there appear to have been two others, one from peritonitis on the second day and one from intestinal obstruction on the thirty-third day. | 18 | 3 |
| 10. ,, | | 29. Collected by Tricomi. | | 25 | 4 |
| 11. Mayo Robson (private). | 18 | 9. Pyloroplasty. | ... ... ... ... ... | 8 | 1 |
| | | 4. Gastro-enterostomy. | ... ... ... ... ... | 4 | |
| | | 3. Gastroplasty. | ... ... ... ... ... | 3 | |
| | | 2. Gastrolysis. | ... ... ... ... ... | 2 | |
| 12. Mayo Robson (hospital). | 16 | Pyloroplasty, gastro-enterostomy, gastroplasty, and pylorectomy. | — | 11 | |
| 13. Kappeler. | 8 | Gastro-enterostomy. | — | 4 | 4 |
| 14. Andrews and Eisendrath. | 2 | ,, | — | 1 | 1 |
| 15. W. H. Bennett.* | 1 | Indurated part tucked in and stitched. | — | 1 | |
| 16. Chaput. | 1 | Gastro-enterostomy. | — | 1 | |
| 17. ,, | 1 | Gastro-enterostomy followed by entero-anastomosis. | — | 1 | — |
| 18. Grad. | 1 | Excision of ulcer. | — | 1 | — |
| 19. Krogius. | 1 | Resection. | — | 1 | |
| 20. Klansner. | 1 | ,, | — | 1 | — |
| 21. Czerny. | 1 | ,, | — | 1 | |
| 22. Cordua. | 1 | ,, | — | 1 | — |
| 23. Billroth. | 1 | ,, | — | 1 | — |
| 24. Hofmeister. | 1 | ,, | — | 1 | — |
| 25. Drobrich. | 1 | ,, | — | 1 | — |
| 26. Bremner. | 2 | ,, | — | 2 | — |
| 27. Lange. | 1 | ,, | — | 1 | — |
| 28. Lidner. | 1 | ,, | — | 1 | — |
| 29. Keen. | 1 | ,, | — | 1 | — |
| | 188 | | | 157 | 31† |

* Cases 15 to 29 have been collected from various sources by Mr. Willmott Evans. † = 16·4 per cent. of mortality.

*References.*—1. Berliner Klinische Wochenschrift, 1882, No. 3. 2. Archiv für Klinische Chirurgie, 30, 1. 3. Centralblatt für Chirurgie, 1882, p. 756. 4. German Congress of Surgery, 1894. 5. Centralblatt für Chirurgie, 96. 6. Semaine Medicale, 96, iii., 39. 7. Centralblatt für Chirurgie, 1896. 8. Norddeutsches Medicinisches Archiv, 1898, No. 26, p. 1. 9. Riforma Medica, 1899. 10. Revue de Chirurgie, February,

1893. 11 and 12 are here reported for the first time. 13. Deutsche Zeitschrift für Chirurgie, 1898, 49, p. 113. 14. Annals of Surgery, October, 1899. 15. THE LANCET, Feb. 26th, 1898, p. 566. 16. Bulletin de la Société Chirurgique de Paris, 1898, p. 126. 17. Ibid., p. 21. 18. Journal of the American Medical Association, 1899, vol. i., p. 764. 19. Centralblatt für Chirurgie, 1896, p. 538. 20. Münchener Medicinische Wochenschrift, 1896, p. 863. 21. Archiv für Klinische Chirurgie, vol. xxx., p. 1. 22. Revue des Sciences Médicales, vol. xxxiv., p. 259. 23. Archiv für Klinische Chirurgie, 1893, vol. xxxix., p. 805. 24. Beitrage zur Klinische Chirurgie, 1896, vol. xv., p. 356. 25. Centralblatt für Chirurgie, 1893, p. 393. 26. Wiener Klinische Wochenschrift, 1896, vol. ix., p. 1117. 27. New York Medical Journal, May 21st, 1892, p. 584. 28. Medical Press and Circular, 1898, p. 334. 29. New York Medical Journal, June 4th, 1898, p. 778.

draws a parallel between the treatment of hernia and that of ordinary gastric ulcer, and proposes that as hernia is treated radically with success so should gastric ulcer in properly selected cases. By radical treatment he means gastro-enterostomy, which he believes to be the best operation for gastric ulcer. He argues that the mortality in gastric ulcer medically treated varies according to statistics from 50 per cent. to 8 per cent., and says that he has collected 50 cases where the surgical treatment of gastric ulcer had been employed, not simply for the complication of perforation, but as a radical treatment for uncomplicated, though intractable, ulceration. Out of the 50 cases there were seven deaths, giving a mortality of 14 per cent., which is rather more than the mortality that Lebert says occurs in all ulcers treated medically, but Lebert under-estimates the mortality in gastric ulcer, which according to many authorities varies from 20 per cent. to 30 per cent. of all cases medically treated. If, therefore, surgical treatment can show a smaller all-round death-rate in cases of gastric ulcer that have not yielded to properly carried out medical treatment the views expressed by Tricomi, Heydenreich, and others are well worth considering seriously. Heydenreich[21] puts the matter tersely: "The death-rate for all cases of gastric ulcer is 25 per cent. to 30 per cent., but for gastro-enterostomy only 16·2 per cent., and therefore the operation has less danger than the disease. Another advantage of not waiting for complications is that the patient is in better health. At any rate, cases which do not improve with medical treatment in a reasonable time should be treated surgically."

It will thus be seen that the question will have to be finally settled by a careful study of statistics, and to this end I have, with the assistance of Mr. Willmott Evans, collected 188 cases of gastric ulcer treated surgically. Of this number 157 recovered and 31 died, thus giving a mortality of 16·4 per cent. My own experience and a careful study of the subject would lead me to say that the time has not yet come for a sweeping change to be made in the treatment of uncomplicated gastric ulcer except in the way of more rigid and more prolonged medical treatment, but that when the ulcers prove intractable, or when complications supervene, medical treatment should give place to surgical treatment at a much earlier stage than has hitherto been the custom. It is unfair to the surgeon to hand over to him moribund patients, as is at present so often done, and it is in my mind unjust to the patients to persist in dosing them with medicine or otherwise treating palliatively cases that can only be benefited or cured by surgical means.

My own contribution to the subject is as follows. I find that I have operated on 34 cases of intractable gastric ulcer with various complications which in every case must have caused permanent disability or would have ended fatally, but excluding perforation, hæmorrhage, and cancer, all of which I am considering separately. Of these, 18 operations were done in private with one death, giving a mortality of 5·5 per cent., and 16 in hospital with five deaths, giving a mortality of 31·2 per cent., or if both private and hospital cases be taken together the mortality is 17·6 per cent. The difference between the private and hospital cases can be readily explained in that a large proportion of the latter were almost moribund before surgical help was sought, and though many of the cases in private were also very far advanced the treatment of such serious cases in a private surgical home, with the undivided care of special nurses and constant medical supervision, together with the comforts and advantages that such homes afford, must lead to better results all round.

The conclusions that I would urge concerning the surgical treatment of gastric ulcer are the following: 1. In all cases of gastric ulcer, except in case of perforation, medical treatment should be first tried. 2. Where ulceration persists or the symptoms recur and prove intractable to medical treatment gastro-enterostomy should be performed so as not only to give rest to the stomach but to relieve the hyperacidity of the gastric juice. 3. As a rule, direct treatment of the ulcers by excision is unnecessary. 4. Complications, such as adhesions, pyloric contraction, dilatation, and hour-glass contraction, leading to loss of flesh and impairment of health, should be treated surgically. 5. In chronic hæmorrhage surgical treatment is advisable, as it is in some cases of recurrent acute hæmorrhage, but, as a rule, acute hæmorrhages should be treated medically. 6. In perforation surgical treatment is demanded.

As it would be tedious and take up too much time to relate the particulars of my 34 cases I have selected a few examples of which the following are abbreviated notes.

Hæmorrhage, which occurs in about 80 per cent. of all cases of ulcer of the stomach, may be arterial, venous, or capillary, and curiously capillary hæmorrhage may be so free as to render it impossible to say that some large vessel has not given way, yet after death no gross lesion may be found even on careful examination. This capillary hæmorrhage occurs under two special circumstances—vicarious hæmatemesis at the menstrual period and hæmatemesis after surgical operation. The former is well known and usually yields to medical treatment, surgical treatment having signally failed on the few occasions on which it has been tried. Hæmatemesis after surgical operations is neither well recognised as an entity nor well understood, yet is often serious and at times fatal without any apparent cause and with very little to be discovered in the stomach after death. I have seen it to follow on operation for intestinal obstruction, tuberculous peritonitis, cholecystotomy, choledochotomy, hernia, ovariotomy, and simple exploratory laparotomy, and in two cases a fatal termination occurred without peritonitis or other cause than the profound hæmatemesis to account for death. That the anæsthetic was not responsible for the hæmatemesis was shown by one of my cases having been operated on under cocaine. The case was a cholecystotomy for cancer of the common bile-duct and the operation only occupied 15 minutes, yet violent hæmatemesis set in the day after operation and proved fatal in three days, and at the necropsy nothing was found in the stomach to account for the bleeding, nor any peritonitis or other condition than the hæmorrhage, to account for death. Herr Eiselberg, at the Surgical Society in Berlin, said that he had observed hæmatemesis following operation in the Königsberg Klinik after Bassini's operation, after ligature of the omentum, after operation for omental hernia, after laparotomy for ileus and for torsion of the omentum, and after proctectomy for cancer. In some cases numerous hæmorrhages into the mucosa of the stomach and in others numerous small recent ulcers had been found post mortem. There could be no doubt as to the causal relation between the operation and the hæmorrhage. Vomiting after narcosis could not have been the cause, as in two cases there was no vomiting after the anæsthetic. In six cases, however, there was ligature of the omentum and in the seventh the omentum was probably contused. In an experiment on an animal multiple hæmorrhages into the stomach followed twisting of the omentum. At the meeting in December, 1899, of the Free Society of Surgeons in Berlin Herr Reichard related three cases of parenchymatous gastric hæmorrhage. In one cholecystenterostomy had been performed for obstructive jaundice and was followed on the sixth day by hæmatemesis; the patient died in two days, no visible cause to account for the bleeding being found in the stomach or intestines after death. In two other cases after operations in young women violent hæmatemesis occurred as if from gastric ulcer; both were operated on but gastrotomy failed to reveal any source of bleeding. Both died and the necropsies revealed no manifest vascular lesions or even ulcers. This form of hæmatemesis coming on after operation is not necessarily fatal though it is serious and demands active treatment. Free purgatives by means of calomel, and rectal feeding, with the avoidance of anything by the mouth, are the means I have employed, and usually with success. I have never ventured to operate in these cases as the indications are not clear and the patients have, as a rule, not been in a condition to bear a second operation. Capillary hæmorrhage and hæmatemesis may come on in other conditions, associated with congestion of the portal circulation, enlargement of the spleen, and general engorgements of the venous system, but these do not concern us in regarding hæmatemesis from a surgical point of

[21] Semaine Médicale, Feb. 2nd, 1898.

TABLE II.—EXAMPLES OF INTRACTABLE ULCER OF THE STOMACH TREATED SURGICALLY BY MR. MAYO ROBSON.

| Date. | Sex. | Age. | Nature of ulcer and operation. | Description. | Result. | After history. | With whom seen. |
|---|---|---|---|---|---|---|---|
| June 24th, 1891. | M. | 54 | Ulcer of pylorus; pylorectomy. | Six months' history of epigastric pain with vomiting, the vomit at times being "coffee-ground." There was great loss of flesh. The tumour was felt over the pylorus. Vermicular contraction of the stomach was perceptible through the abdominal wall. Operation: Some adhesions around the pylorus were broken down, and as the tumour of the pylorus was thought to be malignant it was removed by pylorectomy, the opening in the duodenum being sutured to the lower part of the stomach. | R. | Uninterrupted recovery. On the fifth day the patient took three pints of milk and on the tenth day some chicken and other solids. He rapidly gained flesh and went home within the month. The tumour proved to be thickening around an ulcer of the pylorus, and on microscopic examination there was no evidence of growth. The pyloric orifice was almost obliterated. The after-history in this case is interesting in that contraction occurred at the artificial opening, necessitating some months later another operation. | In infirmary. |
| May 24th, 1893. | M. | 36 | Ulcer of pylorus with polypus; pyloroplasty. | Ten years' history of pain after food, indigestion, and vomiting. Of late the vomit had been large in quantity and occurring every second day. When in health the man weighed 10 st. 5 lb., but on coming under my care he weighed only 5 st. 7½ lb. and was in a condition of profound exhaustion. No tumour could be felt. The stomach was enormously dilated. Operation: On opening the abdomen the pylorus was found to be constricted so that it would not admit a No. 8 catheter. On laying open the pylorus longitudinally two polypi were found on the proximal side and these acted like a valve and closed the small passage remaining. After removing them the longitudinal incision was stitched up transversely over a bone bobbin. | R. | The polypi were reported to be malignant, but I think the after-history scarcely bore out the pathologist's report, for the man rapidly put on weight and by June 24th he weighed 7 st. 4 lb., and by July 8th 8 st. 3½ lb., and within three months he had obtained his ordinary weight of 10 st. | " |
| July 25rd, 1898. | F. | 44 | Pyloric ulcer; excision of ulcer and pyloroplasty. | Well until two years ago, when the patient had colic and loss of flesh. Under treatment apparently she recovered and regained some of the lost weight. On Sept. 15th, 1897, there was recurrence of attacks similar to that of a year before, but with pain on the right side over the pylorus. There was loss of weight and strength. The patient had for some time been an invalid and had been continuously under medical treatment for months. The patient weighed 6 st. 11 lb. There was visible peristalsis towards the pylorus which was fixed to the gall-bladder, but no pain or tenderness. The liver was two inches below the costal margin, but was not nodular and there was no jaundice. Operation: The ulcer at the pylorus was adherent to the liver which formed the base of the ulcer and there was stenosis of the pylorus. Pyloroplasty was performed after excision of ulcer, the opening being sutured transversely over a bone bobbin. | R. | By Dec. 23rd, 1898, the patient had gained 1 st. 8 lb. in weight and had no trouble in digesting anything. On Dec. 23rd, 1899, Dr. T. B. Hearder reported patient as "very well" and of normal weight. | Dr. Johnstone (Ilkley). |
| March 16th, 1897. | F. | 46 | Stricture with active ulceration at pylorus; pyloroplasty. | Gastralgia for several years, relieved by food. In November, 1894, the patient vomited some dark fluid, and since then had had frequent vomiting, the longest interval being two or three weeks. There was pain in the stomach accompanied by a hard lump and often followed by vomiting. There was great loss of weight and strength. Operation: Contraction and thickening of the pylorus, the passage only admitting a No. 12 catheter. | R. | Well in 1899. There had been considerable gain in weight. | Dr. Drake (Headingley). |
| Jan. 13th, 1897. | M. | 52 | Ulcer of pylorus with stricture; pyloroplasty. | Bad health for 20 years with dyspepsia. The man had had enteric fever nine years before. For the last two years he had been much worse with pain, sickness, and vomiting from two to three hours after meals, relieved by vomiting of large amount, but never blood. There was loss of flesh, the patient's weight being 9 st. 3 lb., with emaciation and dilatation of stomach. There was no tumour. Stricture of pylorus. | R. | On Sept. 19th, 1898, Dr. Wilks wrote: "For some time little improvement; stomach now works well. Looks better than I have ever seen him." The man was well in February, 1900. | Dr. Wilks (Grassington). |
| Sept. 26th, 1898. | F. | 41 | Ulcer of stomach; gastrolysis. | Dilatation of stomach after gastric ulcer and adhesions around pylorus. The patient complained of pain at the epigastrium and on the left side. 14 years ago he first noticed the pain, which had been worse since January and was increasing in severity. The pain was paroxysmal, not worse or specially present after food, though occasionally food caused pain. Since January the patient had vomited frequently. It was years since any blood was brought up. There was no certainty of loss of weight. On two or three occasions the fæces had been blood-stained. The patient was never jaundiced. There was no fulness of the epigastrium. There was visible peristalsis with general tenderness of the abdomen on palpation, but especially over the epigastric region. Splashing sounds were obtained. Operation: Extensive adhesions were found between the gall-bladder, liver, and pylorus. A cicatrix was found in the wall of the stomach. There was no stricture of the pylorus, but it was found kinked owing to the dilated stomach dragging on the adhesions. Omentum was placed between the surfaces to prevent further adhesions. | R. | Recovery satisfactory and the patient was able to take food well. Later reports were satisfactory in every respect. | In infirmary. |

TABLE II.—EXAMPLES OF INTRACTABLE ULCER OF THE STOMACH TREATED SURGICALLY BY MR. MAYO ROBSON (*continued*).

| Date. | Sex. | Age. | Nature of ulcer and operation. | Description. | Result. | After history. | With whom seen. |
|---|---|---|---|---|---|---|---|
| May 20th, 1899. | F. | 41 | Pyloric ulcer, perigastritis, and adhesions; gastrolysis. | For months there had been pain beneath the left clavicle and indigestion with loss of flesh. The patient had recently noticed a tumour in the upper abdomen. There were dilated stomach and a moveable painless tumour in the upper abdomen attached to the liver. Operation: Perigastritis with adhesions to the gall-bladder and liver. Tumour was an abnormal projection from the left lobe of liver. The adhesions were separated. | R. | Very good recovery. In 1900 health was regained. | Dr. McGregor Young (Leeds). |
| May 18th, 1899. | F. | 45 | Perforating ulcer leading to hour-glass contraction; gastroplasty. | Nine years ago the patient had severe pain in the right hypochondriac region; she also vomited a good deal, particularly after food. The pain was not relieved by vomiting. She could take milk and soda sometimes without vomiting. There was slight swelling in the epigastric region. This attack lasted for three weeks, then the patient lost all pain, the vomiting stopped, and she gained strength. Three years ago another attack commenced with exactly the same symptoms except that the pain was on the left side instead of the right and was more severe. The vomiting was the same as in the first attacks. There was swelling in the epigastric region for a month while it lasted. Last September another attack, exactly of the same kind as the last, commenced, the pain being again on the left side. Since then she had never been free from pain for two days together. Vomiting was very soon brought on after food, and there had been a slight swelling in the epigastrium. During the last three weeks she had been rather better. The abdomen was very tender, especially in the upper part. There was a particularly tender spot just to the left of the middle line and about two inches from the umbilicus. There was no swelling of the epigastrium. Nothing could be felt on deep palpation. Operation: An incision was made above the umbilicus in the linea alba. The stomach was exposed and found to be adherent by a firm adhesion to the anterior abdominal wall just where the tender spot was. This was of about the size of a threepenny-bit. It was cut through and there was found to be a gastric fistula. On examination the stomach was found to be cicatrised at this point as the result of old ulceration so that the finger could not be made to pass the constriction. A longitudinal incision was made about three inches long through all the coats of the stomach and this was stitched up transversely over a bobbin. There was also found considerable puckering in the lesser curvature as the result of another distinct ulcer. | R. | The patient made an uninterrupted recovery. She had no pain or vomiting after the operation and steadily gained weight. Her weight on June 19th was 6 st. 4½ lb., on the 25rd 6 st. 5 lb., on the 26th 6 st. 7 lb., and on July 29th 7 st. 2 lb. | In infirmary. |
| Oct. 4th, 1898. | F. | 32 | Pyloric ulcer with contraction; gastro-enterostomy. | Pyloroplasty had been performed during active ulceration of pylorus in December, 1895. There was great relief for a time, but later recurrence of dilatation, vomiting, pain, and other symptoms, with very considerable loss of flesh. The patient was thin and anæmic; the pulse was feeble and rapid. There was marked dilatation, the stomach reaching well below the umbilicus. Operation: Gastro-enterostomy, a bone bobbin being employed. | R. | In October, 1899, the patient was well and active. By February, 1900, he had gained 1 st. 10 lb. in weight. | Dr. Salter (Scarborough). |
| August 4th, 1899. | M. | 28 | Pyloric ulcer and tumour of pylorus; gastro-enterostomy. | Loss of weight. Two years before the man weighed 12 st. 12 lb., but now only 9 st. 6 lb. There was pain two hours after food. For the last two months there had been vomiting on an average five times a week, which was twice of a coffee-ground character. There was enormous dilatation of the stomach. There were a pyloric tumour which was moveable and visible peristalsis. Operation: Large mass at pylorus evidently thickening due to active ulceration; glands large but not matted. Gastro-enterostomy (bone bobbin used). | R. | By August 27th, 1899, the patient had made a good recovery. He then weighed 9 st. 7 lb. and on Sept. 20th 10 st. 13 lb. He could then eat anything. | Dr. Kilner Clarke (Huddersfield). |
| May 6th, 1899. | M. | 31 | Extensive ulceration of stomach with large tumour; gastro-enterostomy. | Dyspepsia for 17 years, which had been more severe for the last 20 months. Lead poisoning was discovered and treated and a good recovery was made. 16 months before vomiting recurred and from the outset large quantities were ejected but never blood. There was recurrence occasionally of similar attacks which were always relieved by treatment. In December, 1897, the stomach reached the pubes and visible peristalsis was detected by Dr. Barrs. Relief followed dieting and lavage till March, 1898, since which time there was almost constant pain, which was not materially worse after food nor relieved by vomiting. There was loss of weight from 10 st. to 8 st. 6½ lb., and great feebleness. Operation: A large irregular tumour was found at the pylorus and along the lesser curvature, but the glands, though large, were discrete. Gastro-enterostomy was performed, a bone bobbin being employed. | R. | The patient was 8 st. in weight when he left the home on June 7th, 1898. On August 17th he weighed 9 st. 3 lb. A letter from him dated Feb. 12th, 1899, says: "My health continues perfect. I have not lost a day's work through illness since I recovered." | Dr. Barrs (Leeds) and Dr. Webster (Golcar). |

view. Venous hæmorrhage may cause rapid death from perforation of the coronary, splenic, or other large veins. The portal vein has also been perforated by an ulcer of the duodenum. Owing to the more languid circulation and the small pressure of the blood a fatal result is much less likely than in perforation of arterial trunks, but if the hæmorrhage should persist or be repeated such a case would be likely to be benefited by surgical treatment. Serious or fatal hæmorrhage from the stomach is usually arterial. It may be from (*a*) the small branches which radiate between the glands in the mucous membrane, and this may occur before the ulcer has even perforated the mucous coat; from (*b*) the large arteries along the curvatures, the coronary being the most frequently affected; or (*c*) from the extrinsic arteries, the splenic being, according to Brinton, responsible for 55 per cent. of the deaths in fatal hæmatemesis. Ulcers of the pylorus and duodenum affect principally the pancreatico-duodenal and then the right gastro-epiploic arteries.

The following tables are taken from a valuable thesis by M. Savariaud and show at a glance the vessels chiefly affected.

TABLE III.—*Showing the Vessels affected in Bleeding Ulcer of the Stomach.*

| Arteries. | No. of cases. | Veins. | | Undetermined. | No visible orifice of vessel. | Not mentioned | Total. |
|---|---|---|---|---|---|---|---|
| Splenic ... ... ... | 17 | Branch of the coronary ... | 2 | 2 | 4 | 4 | 29 |
| Coronary ... ... | 6 | Other veins... | 2 | — | — | — | 8 |
| Arterioles ... ... | 10 | — | | — | — | — | 10 |
| Total ... ... | 33 | | 4 | 2 | 4 | 4 | 47 |

The aorta has been perforated by ulcer of the stomach in cases recorded by Grüngeld and Stick, the hepatic artery by an ulcer of the duodenum (recorded by Broussais), and the heart itself in perforating ulcers of the stomach (recorded by Chiari, Brenner, and Finney). The peculiarly fatal nature of hæmorrhages from medium-sized arteries depends on the fact that the ulcer makes a lateral opening into the vessel which prevents natural hæmostasis by retraction and contraction; then the whole force of the heart is exerted on the clot which tends to form during the syncope that usually occurs when a large quantity of blood is poured out. The duration of the hæmorrhage or the interval between the first appearance of bleeding and death is of great importance surgically. The following table from M. Savariaud's thesis is therefore worthy of note :—

TABLE IV.—*Showing the Length of Survival after Various Hæmorrhages into the Stomach.*

| Vessels. | Number. | Very rapid death. | Rapid death. | Longer survival. |
|---|---|---|---|---|
| Heart ... ... | 4 | 1 | 1 | 2 (three days). |
| Aorta ... ... ... | 2 | — | — | 1 (ten days). |
| Hepatic ... ... | 2 | — | 1 | 1 (ten days). |
| Splenic ... ... | 17 | 3 | 7 | 7 (from two to 18 days). |
| Coronary ... ... | 6 | 1 | 3 | 2 |
| Pancreatico-duodenal ... | 6 | 1 | 3 | 2 (eight and 15 days). |
| Arterioles... ... | 10 | 1 | 1 | 8 (from four to 15 days). |
| Little veins ... | 4 | 1 | 1 | 2 (from seven to 11 days). |
| Capillaries ... | 3 | 2 | — | 1 (21 days). |

It is curious that the size of the perforated vessel does not seem to bear any relation to the time between the first bleeding and the prolongation of life; this is doubtless due to the irregular and variable amount of coagulation that occurs around the mouth of the opening and within the vessel. It is therefore impossible to diagnose the size of the vessel perforated either from the amount of the bleeding or the length of survival, for death has occurred very rapidly in some cases where the hæmorrhage has been from the capillaries or small vessels.

### SURGICAL TREATMENT OF HÆMORRHAGE DUE TO ULCER.

This is a question which one cannot too carefully consider, and although statistics are apt to be misleading it is a subject in which statistical evidence is manifestly worth careful consideration. Let us first consider what is the mortality from hæmorrhage in ulcer of the stomach. Authors estimate this very differently. Müller gives 11 per cent., Gerhart from 3 to 5 per cent., Welch from 3 to 5 per cent., Steiner 6 36 per cent., Lebert 3 per cent., Brinton 5 per cent., Debove 5 per cent., Leube 1 per cent., and Dreshfeld 3½ per cent. The average of these numbers gives approximately 5 per cent., which seems to be a proportion agreed on by English physicians.

A reference to Table IV. will show that in a quarter of the cases death comes so rapidly that there is barely time to consider the question of surgical treatment. In another quarter a fatal termination takes place in from 24 to 36 hours after the first onset of the bleeding. Surgical treatment in these cases of fulminating hæmorrhage has so far yielded few good results and they usually terminate fatally, whether treated medically or surgically, but in the remaining 50 per cent. of cases where repeated hæmorrhages occur, and where the interval between the onset of bleeding and death varies from a few days to a fortnight, the question of surgical treatment is well worth considering seriously.

Doubtless the desirability of stopping bleeding from an ulcer of the stomach by surgical means must have occurred to many minds before being put into execution. To Mikulicz, however, belongs the claim of having been the first to operate for hæmorrhage from a gastric ulcer. This was on Feb. 13th, 1887. Death in this case occurred 50 hours later. Roux of Lausanne was the first to perform a successful operation and that in a case of hæmorrhage from the coronary artery, in which he excised the ulcer and ligatured the artery at both ends. His case was reported at the French Congress of Surgery in 1893. At the German Surgical Congress in 1897 the subject was discussed fully by Leube and Mikulicz and the conclusions arrived at were that a patient suffering from violent acute hæmorrhage would stand a better chance of being cured by medical treatment, seeing that the mortality in all ulcers from hæmorrhage under medical treatment is only 5 per cent., but that where bleeding was repeated—in other words, where life is prolonged for several days and the hæmorrhage tends to recur—surgical treatment should be advocated. Keen and Hartmann also adopt the view of abstaining from operation except in cases of repeated small hæmorrhages. On the other hand, Dieulafoy urges immediate operation in every case of hæmatemesis in which the loss of blood exceeds half a pint and especially if it recurs within 24 hours. He relates a case of recovery after severe bleeding from ulcer in which he gathered up into a fold the ulcerated patch and ligatured it. Dr. Armstrong of Montreal[22] also advocates operation, not only in repeated small hæmorrhages which persist in spite of treatment, but in all large hæmorrhages after a second recurrence where the cause is probably gastric ulceration. In one case, that of a lady, aged 35 years, where repeated bleedings had occurred during the previous seven days, he performed gastrotomy and cauterised three separate bleeding points in the stomach, a satisfactory recovery resulting. In a second case reported by him Dr. Elder of Montreal operated upon a lady of 42 years of age on the third day for repeated hæmorrhage and ligatured a bleeding vessel in the floor of an ulcer at the lesser curvature. Unfortunately the patient died from acute anæmia the following day, though no fresh bleeding had occurred. I have myself operated on two cases of acute hæmatemesis. In one, a patient under the care of Dr. T. Churton, a man, aged 36 years, who gave a history of ulcer for over a year with great loss of flesh and strength, was suddenly seized with violent hæmatemesis, which was followed within 24 hours by a second seizure, when I was asked to see him. He was extremely weak and very thin and anæmic, and looked as if he would die if attacked by bleeding again. His pulse at the time of operation was 150. A gastro-enterostomy was performed by means of a Murphy button, the whole operation only occupying 15 minutes. For five days he did well, when he was seized with sudden pain and from this time never regained strength. Vomiting set in on the eighth day and he died on the tenth. No further bleeding occurred and at the necropsy a duodenal ulcer was found opening into the gastro-duodenal artery. The cause of death was peritonitis the result of a leakage on the fifth day, when the button began to separate. So far as the hæmorrhage was concerned the gastro-enterostomy had apparently been successful. In a second case sent to me by Dr. Peter MacGregor of Huddersfield there was a history of severe hæmorrhage twice repeated within a week and occurring in a man of 38 years of age debilitated by chronic ulcer of the pylorus with dilatation of the stomach. The patient was profoundly weak and anæmic but stood the operation of gastro-enterostomy very well and made a good recovery without any drawback and without repetition of the bleeding.

Of the 15 cases reported by Mikulicz in five cases the ulcer was not discovered, in two cases it was excised, in one case the pylorus was resected, and in another case the ulcer was cauterised. Petersen has reported from the Heidelberg Clinic six cases of hæmorrhage cured by operation, two cases by excision of the ulcer, and one case by gastro-enterostomy. Hartmann collected 12 cases, with eight deaths and four recoveries. Nearly all the deaths occurred from collapse. Besides the contra-indication to operation in acute hæmorrhage, advanced age, poor general condition of the patient, and excessive anæmia would seem to be contra-indications.

Tables V. and VI. show all the cases Mr. Willmott Evans and I have been able to collect from various sources.

The following specimens illustrate hæmorrhage from ulcers: No. 2401A shows the ulcer midway between the cardia and the pylorus near the lesser curvature, eroding the splenic artery on which is a small aneurysm. It was from a man 56 years of age. Death occurred on the fourth day. No. 2402 is a specimen from a case of fatal hæmorrhage from a large vein which is perforated by an ulcer in two places. No. 2393 shows the hæmorrhagic erosions in the stomach of a woman who died from cancer.

It will be seen that in acute hæmorrhages the mortality is very high. 27 died and 15 recovered in 42 cases, which gives a mortality of 64·2 per cent. On the other hand,

[22] Brit. Med. Jour., Oct. 21st, 1899.

TABLE V.—*Cases of Surgical Treatment of Acute Hæmatemesis from Gastric Ulcer.*

| Name of surgeon operating or compiling cases. | No. of cases. | Operation. | Recovered. | Died. |
|---|---|---|---|---|
| 1. Mikulicz. | 1 | Cautery. | — | 1 |
| 2. Mixter. | 1 | Exploratory. | — | 1 |
| 3. De Salzer. | 1 | ,, | — | 1 |
| 4. Mikulicz. | 1 | Cautery. | — | 1 |
| 5. ,, | 1 | Excision of ulcer. | 1 | — |
| 6. Doyen. | 1 | Cautery. | — | 1 |
| 7. Roux. | 1 | Excision of ulcer and ligature. | 1 | — |
| 8. Roux (Savariaud). | 1 | Ligature of artery of lesser curvature. | 1 | — |
| 9. Elliott. | 1 | Pylorectomy. | — | 1 |
| 10. Hartmann. | 1 | Gastro-enterostomy. | 1 | — |
| 11. Hirsch. | 1 | Exploratory. | 1 | — |
| 12. Abbé. | 1 | ,, | — | 1 |
| 13. Wernet and Korte. | 1 | Cautery. | — | 1 |
| 14. Michaux. | 1 | Exploratory. | — | 1 |
| 15. Cazin. | 1 | Suture of ulcer. | — | 1 |
| 16. Mayo Robson. | 2 | Gastro-enterostomy. | 1 | 1 |
| 17. Armstrong. | 1 | Cautery. | 1 | — |
| 18. Elder. | 1 | Ligature. | — | 1 |
| 19. Gifford. | 1 | Excision. | — | 1 |
| 20. ,, | 1 | Exploratory. | — | 1 |
| 21. Dieulafoy. | 1 | Ligature of ulcer en masse. | 1 | — |
| 22. Petersen (Czerny's Clinic). | 3 | Parenchymatous vicarious hæmatemesis. | — | 3 |
| 23. Reichard. | 2 | Post-operative hæmatemesis. | — | 2 |
| 24. Konig. | 1 | Resection and later gastro-enterostomy. | 1 | — |
| 25. R. W. Andrews. | 1 | Ligature of erosions and later gastrorraphy. | 1 | — |
| 26. ,, | 1 | Ligature of ulcer. | 1 | — |
| 27. Hartman. | 12 | Some of the above cases are probably included in this series. | 4 | 8 |
| Total. | 42 | | 15 | 27* |

* = a mortality of 64·2 per cent.

*References.*—1. Wochenschrift für Klinische Chirurgie, 1888, Band xxxvii., p. 579. 2. Boston Medical Journal, 1889, p. 38. 3. Wochenschrift für Klinische Chirurgie, 1889, vol. xxxix., p. 833. 4. Proceedings of the German Surgical Congress, 1897. 5. Ibid. 6. Traité de la Chirurgie des Affections de l'Estomac, p. 132. 7. Revue de Gynécologie, 1897, p. 113. 8. Ibid. 9. Boston Medical and Surgical Journal, 1897, p. 54. 10. Savariaud, Thèse de Paris, 1898. 11. Berliner Klinische Wochenschrift, 1898, p. 847. 12 Medical News, 1898, p. 284. 13. General Surgical Congress, 1897. 14. Presse Medicale, 1898, p. 31. 15. Ibid., 1899, p. 31. 16. This case is here reported for the first time. 17. Brit. Med. Jour., 1899, p. 1088. 18. Ibid. 19. Guy's Hospital Reports, 1896, vol. liii., p. 163. 20. Ibid. 22. Medical Press, 1899. 23. Ibid., Jan. 3rd, 1900. 24. Philadelphia Medical Journal, January, 1899, p. 929. 25. Annals of Surgery, October, 1899, p. 410. 26. Ibid., p. 409. 27. Semaine Médicale, No. 7 and No. 8, 1898.

TABLE VI.—*Cases of Surgical Treatment of Chronic Hæmatemesis from Gastric Ulcer.*

| Name of surgeon operating or compiling cases. | No. of cases. | Operation. | Recovered. | Died. |
|---|---|---|---|---|
| 1. Kuster. | 2 | Cautery and gastro-enterostomy. | 2 | — |
| 2. Tuffier. | 7 | Gastro-enterostomy. | 5 | 2 |
| 3. Petersen. | 4 | ,, ,, | 4 | — |
| 4. ,, | 2 | Excision. | 2 | — |
| 5. Spencer. | 2 | ,, | 2 | — |
| 6. Guinard. | 1 | Gastro-enterostomy. | 1 | — |
| 7. Curtis. | 1 | Pyloroplasty. | 1 | — |
| Total ... ... | 19 | | 17 | 2* |

* = a mortality of 10·5 per cent.

*References.*—1. Archiv für Klinische Chirurgie, 1894, vol. xlviii., p. 787. 2. Savariaud, Thèse de Paris, 1898, p. 128. 3 and 4. Czerny's clinic. 5. THE LANCET, August 26th, 1899, p. 601. 7. Annals of Surgery, August, 1894.

in the chronic hæmorrhages out of 19 cases two died, giving a mortality of 10·5 per cent.

In considering the question of operative treatment for supposed hæmorrhage from the stomach it is well to bear in mind that bleeding may occur from the following causes: (1) from retarded circulation, as in cirrhosis of the liver and heart disease; (2) from aneurysm of the aorta and cœliac axis; (3) from miliary aneurysms in the stomach; (4) from erosion of a vessel by ulceration due to a biliary calculus, as in a case reported by myself;[23] and (5) from vicarious menstruation. The operative measures that may be employed in the treatment of hæmatemesis from bleeding ulcer are (1) excision of ulcer; (2) pylorectomy; (3) cauterisation of the ulcer; (4) ligature of the ulcer and vessels *en masse;* (5) ligature of the bleeding vessels *in situ;* (6) scraping of the ulcer followed by suture of the ulcerated surface; (7) ligature in their continuity of the large vessels supplying the ulcer; and (8) gastro-enterostomy. After gastro-enterostomy as a rule all symptoms disappear at once and hyperacidity ceases owing to the unobstructed escape of the gastric contents.

### OPERATION FOR BLEEDING ULCER.

On account of the fear of exciting fresh hæmorrhage it is undesirable to wash out the stomach before operating on a bleeding ulcer, and as the patient is usually anæmic and will therefore bear shock badly it is desirable to have him enveloped in cotton wool or otherwise kept warm on a heated table and to give a subcutaneous injection of strychnine before operation. If it be unnecessary to give an infusion of saline fluid before the operation an assistant should be ready to perform that duty while the abdominal operation is being proceeded with, should it be called for. After the abdomen is opened the stomach may be emptied by pressing the contents into the duodenum as suggested by M. Terrier. This saves much time, and rapidity is of great importance. The surface of the stomach should then be carefully examined, as very frequently a puckering of the surface or a thickening of the coats will be noticed at the site of the ulcer, or a difference in colour may sometimes indicate its site. Should the operator be fortunately able to find these indications much time may be saved, but if no indications of this sort be obtained the stomach must be well drawn forward and opened either by a vertical incision, which gives less hæmorrhage, or by an incision in the long axis of the stomach, which affords a much better view of the interior. In order to avoid soiling the peritoneum thin flat sponges should be placed within the abdomen, and it is well to have a perforated sterilised gauze pad covering the stomach, the opening to correspond with the opening in the stomach. The edges of the stomach should then be held open by forceps, one above and below and one at each end.

The interior of the stomach must now be systematically examined, first the anterior and posterior surfaces, the upper and lower curvatures, and lastly the pyloric and cardiac orifices, all of which can be done either by the naked eye or by the aid of an electric cystoscope or a reflected light. If the posterior wall of the stomach cannot be efficiently examined a slit may be made in the omentum and two fingers, or even the whole hand, pushed through it and employed to invaginate the posterior wall. If no ulcer can be found on the wall of the stomach the duodenum should be explored, not only by the finger, but by invagination. If no ulcer be found anywhere and the bleeding proves to be capillary or from small undiscoverable ulcers, gastro-enterostomy as advocated by Doyen should be performed, but if an ulcer be discovered and it be possible to excise it, that operation should be done, as it undoubtedly offers the likeliest method of cure. After excision of the ulcer and ligature of the bleeding vessels the edges of the wound are brought together by sutures, of which one or two layers may be employed. Should the excision involve the peritoneal coat it is desirable if possible to apply Lembert's sutures, and if it be on the posterior wall the operation may present some, though not insuperable, difficulty. Should the ulcer be discovered in some region where excision is impracticable—for instance, near the cardiac end—the method adopted by Mikulicz, in his first operation in 1887, of applying the cautery may be employed. This seems to have answered well in several cases, and where death occurred afterwards it was not from a recurrence of the bleeding. Possibly in a case of this kind gastro-enterostomy might

[23] Diseases of the Gall-bladder and Bile-ducts, second edition, 1900

also be advisable by way of setting the stomach at rest, or the ulcer might be curetted; but in one case in which I simply scraped the ulcer and applied carbolic acid an extension of the ulcer occurred and led to perforation on the eighth day, so that I am not much in favour of trusting to curetting simply. If any superficial points of bleeding be discovered they may be caught up by forceps and ligatured, but this is more easily said than done, as the mucous membrane is very friable, and a ligature if drawn at all tightly tends to cut its way through; moreover, forceps easily tear the mucous membrane and may produce a larger bleeding area. A method of ligature may be employed if the ulcer is small. This has proved serviceable in several cases and is easy of application when the ulcer can be reached. This method is ligaturing *en masse*, it has been tested by experiments on animals by Dr. Eisendrath and has been shown to endanger perforation except when supported by external sutures. Ligature of the main arteries of the stomach was suggested theoretically by Savariaud when no bleeding ulcer could be discovered; it does not, however, commend itself as being safe and it has not yet been put in practice.

Should the bleeding be from an ulcer at the pylorus the operation of pyloroplasty may be performed, the ulcer being excised, the edges of the ulcer being united so that the line of sutures shall be transverse to the axis of the pylorus. I would not, however, advise pyloroplasty when there is active ulceration of the pylorus unless the ulcer can be completely excised, for in three cases of this kind I have had disappointments. In one case the patient made a good recovery from the operation but subsequently suffered from stenosis, for which a further operation had to be done. In a second case recovery took place and the patient regained his lost weight, but subsequently a tumour of the pylorus developed which was thought to be cancer and for which I had to perform pylorectomy, and the third case is the one ending in perforation which I mentioned in speaking of curetting ulcers. I think, therefore, that in cases of ulcer of the pylorus where a clean excision of the ulcer cannot be done it would be better to perform gastro-enterostomy or pylorectomy, whichever at the time may appear to be easier. So far as I can gather, the mortality of pyloroplasty in simple ulcer appears to be about 13 per cent., that of gastro-enterostomy about 16 per cent., and that of pylorectomy 23 per cent., but it is most difficult to get at genuine statistics since many single failures are unreported, and these figures must only be accepted as approximate. Wherever the pylorus is adherent, as in my experience it is in so many cases of ulcer, I should certainly prefer gastro-enterostomy, but if the pylorus be extensively ulcerated and free from adhesions pylorectomy can be almost as quickly performed as gastro-enterostomy, seeing that the pylorus is already in the hand. The operative treatment of parenchymatous or capillary hæmorrhage by any surgical method would seem to be of doubtful value, for according to a report by Petersen from Czerny's clinic of three cases operated upon for severe parenchymatous hæmorrhage from vicarious menstruation operation entirely failed to relieve, and of two other cases of post-operative parenchymatous hæmorrhage by Reichard both died.

After a careful study of reported cases as well as from personal experience I cannot help feeling that operative treatment in acute hæmorrhage gives such a high rate of mortality—64·2 per cent. as compared with from 5 per cent. to 10 per cent. in cases treated medically—that it is better in such cases to rely solely on medical means. But in the repeated chronic hæmorrhages that are responsible for quite half the total deaths from hæmatemesis the operation of gastro-enterostomy affords a reliable method of treatment, since it at the same time gives rest to the stomach and removes the hyperacidity of the gastric juice by an operation that can be done with rapidity and comparative safety; moreover, when the ulceration is at the pylorus, where it so frequently leads to hypertrophy and stenosis, the operation not only relieves the symptoms for which it was undertaken but proves curative to the disease.

EXETER DISPENSARY.—The annual meeting of this institution was held on Feb. 17th under the presidency of the Rev. E. Dupuis. The medical officers reported that 6256 patients had been treated during the year, as compared with 6164 in 1898. The financial statement showed that the income amounted to £1866 and the expenditure to £1722.

# The Lettsomian Lectures

ON

# PRACTICAL OBSERVATIONS ON CANCER OF THE BREAST.

*Delivered before the Medical Society of London*

BY SIR WILLIAM M. BANKS, LL.D., F.R.C.S. ENG.,

SURGEON TO THE LIVERPOOL ROYAL INFIRMARY; EMERITUS PROFESSOR OF ANATOMY, UNIVERSITY COLLEGE, LIVERPOOL.

## LECTURE I.[1]

*Delivered on March 5th.*

MR. PRESIDENT AND GENTLEMEN,—Naturally my first duty is to thank you for the honour you have done me in asking me to give the Lettsomian Lectures in the first year of the twentieth century. Let us fervently hope that long ere it has come to an end a remedy will be found for the fell scourge of which I propose to treat. I have in my consulting-room the well-known engraving of the founders of this society. I shall never look on the stiff but commanding figure of Quaker Lettsom as he stands in their midst without a feeling of pride that I have been permitted to be one of those privileged to assist in celebrating his name and fame. The roll of those who have delivered these lectures contains so many distinguished names that I may well feel some diffidence in trying to follow in their footsteps, but I take courage from the recollection that this is not the first time that the Medical Society of London has deputed me to address them.

### EXPERIENCE AND STATISTICS IN MEDICINE.

When a man has to prepare an address the choice of a subject is generally a most difficult matter. If he has nothing of a very distinctly novel character to offer to his hearers it is probably best for him to give them his experiences on the subject with which he is most acquainted. If he has any judgment and discretion in him he may do something useful in this way, for in the medical profession advances are so rapid that they are apt to become bewildering. The record of a long personal experience under such circumstances may be of service as a kind of steadying medium. Moreover, these lectures, although nominally delivered to you, do really reach the majority of the medical public, and one of their prime uses is to present to that public at given periods a synoptical view of all that is known of the subjects which they embrace up to the moment. I will endeavour, then, to put into them my experiences of cancer of the breast during the past 33 years, in which I have been engaged in surgical practice. It is true that in the absence of statistics experience can only produce "impressions and recollections," and the professional statistician holds all "impressions and recollections" in the greatest contempt. He holds that figures can never lie; but, on the other hand, it has long been painfully manifest that nothing can be more lying and delusive than statistics if they are not properly used. In the first place, their collection must be made with the utmost accuracy and with perfect purity of heart and calmness of mind. With medical statistics the temptation to gloss over and soften down unfavourable figures is very great and requires that a man shall summon to his aid all his integrity. Again, when a man presents to you a vast mass of statistics, compiled at the expense of much time and labour, it is practically impossible to go over them with him and you have no choice but to accept them. As a result many errors have been long handed down from book to book until some disagreeable doubter has arisen who has exposed them. Finally, even when the statistics are absolutely correct, the most erroneous deductions may be drawn from them, and from the same figures two men may extract the most opposite conclusions. If anybody wants to know how statistics may be manipulated let him consult the literature of

[1] Lectures II. and III. will be delivered on March 19th and April 2nd, 1900, respectively.

the opponents to the contagious diseases Acts of the antivivisectionist, and the antivaccinationist—all of them prepared by persons of the most superior virtue. Nobody wishes to deny to statistics their great value and their proper place, but one must also stand up for the value of those views which many successes and many failures have engrained on the mind of any man endued with an average amount of good sense and judgment. If, then, a man be not a waverer, blown every way by the wind of opinion, he ought, at the end of an experience extending over the life of a generation, to have come to certain firm and definite conclusions about many things; and if he proposes making these views public he must express them in a firm and definite fashion. This necessarily exposes him to the charge of egotism and dogmatism. The former I shall endeavour to avoid as far as in me lies, but, should I occasionally become dogmatic, I pray you to put it down to the exigencies of the situation, compelling me, as they do, to give my own particular views about cancer of the breast while freely according to every other surgeon the liberty to advocate his views and declare mine entirely wrong.

### THE INCREASE OF CANCEROUS DISEASE AND ITS CAUSE.

Before coming to cancer as it specially manifests itself in the female breast I should like to say something on certain points on the general question of malignant disease which legitimately forms part of our present subject. Most medical men are of opinion that the number of persons who die from cancer in proportion to the number of the population has been steadily increasing. Very voluminous statistics from the returns of the Registrar General and from the returns of deaths in individual towns and counties seem to prove this very emphatically. My own impression, apart from any knowledge gained from statistics, is strongly to the same effect. It is true that the impression of a surgeon who sees a great deal of cancer must be received with care, for it is doubtless the fact that as a man's practice increases he may see more of certain cases than he used to do because his friends, knowing that he is interested in them, send them to him. Thus he may come to think that the same thing is happening in the practice of everybody and that there is a general increase in those diseases all round, whereas the increase is in reality only in his own sphere of observation. In order to protect myself from falling into this mistake I have summoned up my recollection of the year 1861–62, when I was a dresser in the wards of Mr. Syme in the Edinburgh Royal Infirmary. Mr. Syme had a reputation then as being indisputably the first surgeon in Scotland, so that I am sure my old fellow-students of the period I mention will bear me out when I say that the pick of the surgical cases in the south of Scotland were sent to him. I have a very vivid recollection of the run of cases I saw and I possess a note-book to-day containing many of them. Now cases of cancer, although not uncommon, were rare compared with the numbers in the practice of my colleagues at the Liverpool Royal Infirmary and myself at this moment. They were objects of curiosity and interest to us students. I can only remember once seeing a case of cancer of the rectum. So that I am able quite clearly, after an interval of 38 years, to assert that the number of cases in the wards of any one of the surgeons of the Liverpool Royal Infirmary at this day is much larger than I can remember in the wards of so distinguished a man as Mr. Syme, who drew his patients from a great area. This is more than a mere impression. This is a fact. The arguments used against the alleged increase of cancer are that it is more apparent than real on account of the improved diagnosis of modern days producing greater accuracy in death certificates, and on account of necropsies being formerly the exception in hospitals, whereas they are now the rule. In his very able article in the *Practitioner* for April, 1899, Dr. Arthur Newsholme advocates these views with much ability. On these points I will, with your permission, gentlemen, once more revert to my student experience. I think it may be fairly admitted that the character of the medical teaching at any given epoch is a barometer which gives the level of the knowledge of the mass of practitioners at that same period. In 1861 Miller, Syme, Spence, and Patrick Watson were the chief surgical teachers in Edinburgh. I assert that their knowledge of surgical cancer on the surface of the body and in the ends of the intestinal tract was as accurate as that of any surgeon of the present day. Bennett, Laycock, Begbie, Gairdner, and Sanders taught medicine, and I am unable to see any notable difference between their ideas of internal cancer and their methods of diagnosing it as compared with now. If mention be made of the brain, spinal cord, and nervous system generally, then at the time I speak of absolutely nothing was known about them and the improvements in the diagnosis of them can only be appreciated by one who has witnessed the change. But this is not the case with the diagnosis of cancer. I do not like to say much about the increase in the number of necropsies at hospitals because I cannot make a positive statement on the question beyond this, that in my student days at Edinburgh—and I imagine the same holds good of all the great London hospitals—every effort was made to secure post-mortem examinations when possible. One would too gladly wish that Dr. Newsholme were right, but immediately following his paper is one by Professor Roswell Park of Buffalo who states that in England and Wales the death-rate from cancer has risen from one out of 5646 of population in 1840 to one out of every 1306 of population in 1890—that is to say, that in 50 years the death-rate has increased between four and five times—and he makes this astonishing statement: "A careful study of all these tables permits one to make the following startling prophecy. If for the next ten years the relative death-rates are maintained we shall find that ten years from now—namely, in 1909—there will be more deaths in New York State from cancer than from consumption, small-pox, and typhoid fever combined." With every wish, then, to give a good deal to the theory of better diagnosis and more numerous necropsies I cannot bring myself to believe that they account for more than a moderate amount in the increase of cancer mortality.

### LOCAL DISTRIBUTION.

"Has locality anything to do with cancer? This is a matter upon which a great deal hinges, but from personal experience I cannot give any information. It is unlikely that any hospital surgeon will be able to do so, for he who has obtained any reputation for the operative treatment of cancer draws his patients from such varied sources that the question of locality as affecting them is void. On this subject information of any moment can only be obtained by collecting great masses of statistics, and even then the deductions therefrom will have to be made very cautiously and judiciously. The first attempt in this direction was made by Mr. C. H. Moore of the Middlesex Hospital in 1865, and to him is also due the merit of being the first who boldly drew the attention of the profession to the inefficient operations for cancer which were performed in his day. To his courageous protest is due the modern principle of free removal. As we all know, Mr. A. Haviland's labours have been those of a lifetime and his tables of statistics are a marvel. In 1868 he read to the Medical Society of London in this very room his first paper on the Geographical Distribution of Cancer among Females throughout England and Wales during the Decennial Period 1851–60. He found that 4·33 cases of cancer occurred in every 10,000 females and 1·94 in every 10,000 males. Leaving untouched the decennial periods 1861–70 and 1871–80 he recently investigated the period 1881–90. He then found 7·30 cases in 10,000 females and 4·30 cases in 10,000 males—i.e., 0·42 more than double among males and 1·28 less than double among females. Admitting these statistics as true, two things are clear: (1) that there has been a great general increase of cancer all round; and (2) that this increase is much more marked in males than in females. The following are Mr. Haviland's "last words":—1. That the districts having the highest death-rates from cancer among females were invariably associated with seasonally flooded areas traversed by, or in close propinquity to, seasonally flooded rivers. 2. That geologically these high mortality districts were characterised by alluvium and subsoils of clays of every variety of age and formation. 3. That the districts having the lowest death-rates from cancer were situated on elevated land where the drainage was good and the physical features of the country such as to preclude the possibility of floods, where rivers derived their sources, and where, in fact, they were not fully formed. 4. That geologically these low mortality districts were characterised by the oldest, palæozoic rocks, especially those of the carboniferous limestone period, the liassic, oolitic, and cretaceous limestones. The closing sentences of Mr. Haviland's intensely interesting paper (1899) run as follows: "Thus at the end of this brief sketch of the

medical geography of cancer we find ourselves asking the same question that rose to the lips of my audience in November, 1868 'How is it that *limestones* are always associated in England and Wales with the *lowest* mortality from cancer and *flooded clays* with the *highest*?' This question still remains unanswered and will still so remain until the subject is taken up in earnest by the medical profession; for it is a field, I find, after 30 years of working in it, that cannot be made to produce fruit without the toil of many labourers. When the above question is answered light will begin to fall on the cause of cancer." It is a most refreshing thing to find this veteran statistician placing his figures at the disposal of his fellow practitioners, modestly admitting his inability to draw sure and certain conclusions from them and encouraging other workers to supplement his labours so that some determination on a most important question may be reached.

Let us turn to Mr. W. Roger Williams's most interesting work on Diseases of the Breast, published in 1894—a work evincing an infinity of statistical learning. It is a model of how research by statistics should be employed, in which figures are fairly handled and deductions prudently made. Furthermore, it is a mine for all those to dig in who are interested in the question of cancer. Mr. Williams thinks there is much to be said in favour of the opinion that in this country cancer is specially prevalent in flat, low-lying, fenny districts—noting especially Cambridgeshire and the adjacent counties of Northamptonshire, Huntingdonshire, and Bedfordshire. He observes, however (taking his figures from the Forty-seventh Report of the Registrar-General), that all low-lying and seasonally flooded districts have not a high cancer mortality. The very large area drained by the Severn and its tributaries, for instance, has throughout a low average mortality from this disease. In fact, as we shall see presently, his view of the cause of the increased cancer mortality is very different and is not geological at all.

One would very much like to enter into the question of cancer houses, but it is, perhaps, digressing too far from my subject which really has relation to the disease as it occurs in the breast. In this country Mr. Haviland, Mr. D'Arcy Power, and Mr. Law Webb of Ironbridge, as well as certain French and German surgeons, have written papers on the subject of profound interest—indeed, almost terrible interest. Still more evidence, however, will have to be forthcoming to make a clear case, for the liability to fallacious deduction in such a subject is so serious that a great mass and weight of testimony in its favour will yet have to be produced.

### CAUSE OF THE INCREASED CANCER DEATH-RATE.

Up to the present time, while statistics have already cleared, and are at this moment rapidly clearing up, many points about cancer, nothing definite has as yet been furnished by them as to the reason of its increase. That being so, there is a fair and reasonable ground for the employment of the "impression" begotten of experience. For many years the more I have thought over this matter the more forcibly does the idea present itself to me that it may be due to the great increase in the amount of food consumed by the people of this country during the past half century. At all events, this view is worthy of being argued. I think it was first put into my head a long time ago by Sir James Paget. I took a lady suffering from incurable cancer to him. He gave her some directions, and one was that she was to eat as little as possible — to try to starve herself, in fact. His long experience had taught him that to starve the body as a whole probably meant starving the cancer locally. *Per contra*, if that be a correct notion, then cancer ought to be connected with well-nourished bodies. Certain it is that the disease has not appeared to me to affect the weakling, the tea-shrivelled, mummy-like old maid, or the ill-fed, more than half-starved drunkard who never has any money to spend on good food. Its most numerous victims are well-nourished persons, with plenty of beef and fat about them, and often with a fine, healthy colour in their cheeks. In summing up the many operations I have done for cancer of the tongue my recollection of the patients is for the most part of biggish, powerful men with large, strong jaws which were hard to saw through when sawing had to be done. The better the nutrition and the younger the patient the more deadly and rapidly growing is the cancer. Take what is termed a fine, "buxom" woman, 30 or 35 years of age, with cancer of the breast, and her chance of permanent cure even by the most extensive of operations is almost *nil*. It is true that cancer is uncommon in the young during the period of development of the body and of the functional activity of organs, so that in one sense it is a disease of "degeneration"; but this has nothing to do with the good nourishment and muscular development of the body in middle life. Being assured in one's own mind that well-nourished, well-developed, healthy people are the most numerous victims of cancer the questions at once arise, Is the increase of cancer in any way synchronous with an increase of nutrient material—i.e., of food—throughout the country and are people in consequence better nourished? There cannot be a doubt of it. Ever since the passing of the Corn Laws bread has been cheap and plentiful, while during the last 20 years the importation of animal food from other countries has been enormous. The increased wages and emoluments of all classes in this country have enabled them to purchase freely of the best there is to be had in the whole world of things to eat and drink. Our working classes fare admirably. Our better classes eat infinitely too much—especially of animal food partaken of at breakfast, lunch, and dinner. But for the athletic tendency of the age and the general passion for games and exercises which pervades all classes this overstuffing must have proved very dangerous. I am pretty well convinced that when a man is over 45 years of age excess in food is perhaps worse for him than excess in drink. Apparently one of the results of too much nourishing food is the production of a widely spread second-rate kind of gout of a different type from the acute and furious attacks produced in former days by the copious drinking of beer and port wine. Moreover, I think distinctly that it has also to do with the production of the cancerous diathesis. This is also the opinion of Mr. Roger Williams, who, while admitting Mr. Haviland's topographical statistics, cannot agree with him in his geological views but inclines to think that cancer areas are also the areas where the people are best nourished.

The stock answer to what may be called the "over-nutrition" theory is that vegetarians and rice eaters are just as subject to cancer as gross feeders and flesh eaters, and this statement goes on being very steadily repeated from one book to another. I am not prepared to admit this. Cancer is not so rife in Ireland, where feeding has been poor and very largely of a vegetable character, and where improvement in the living of the people has not proceeded *pari passu* with that in England. The report of the Registrar-General for the decade 1881–90 shows that in 1881 in England one death in 36 was due to cancer and in Ireland one death in 47, while in 1890 in England there was one in 28 and in Ireland one in 40. Ireland, therefore, does not rise to the level of England. Mr. Roger Williams has a most interesting chapter of facts in this connexion. He tells that Billings of the United States showed that there were two cases among the whites to one case among the blacks. From what can be learnt of the whole continent of Africa, that vast country enjoys a remarkable immunity from the disease, especially the Egyptian area and the northern parts. At the Cape cancer is common among the whites but very rare among the natives. All through the tropics the disease is distinctly rare. In India the general opinion is that it is not common and that when it does occur neither the rice-eaters nor the meat-eaters are exempt. It is true that certain surgeons—McLeod, Hendley, and Lawrie notably—hold the opposite opinion, but I notice that their experiences are drawn almost entirely from hospital work, and refer chiefly to the number of operations occurring in large hospitals. This seems hardly a sound argument. All that it proves is that a number of cases of cancer came into large hospitals and consequently that in a huge country there must be many cases of cancer; but if statistics are to be of any avail the proportion of cases to the actual population is absolutely necessary to make any fair deduction. It is like the death-rate from snake-bite. To an Englishman who never sees such a thing the sum total of these deaths seems appalling. It is not till one takes the proportion to the astounding population of India that the insignificance of the loss of life from this cause becomes apparent. If there were no knowledge of the exact population of Lancashire, and if a person were to walk round the wards of the Liverpool Royal Infirmary and estimate the cancer mortality of the county from the number of cases found in these wards, his view of the prevalence of the disease would be a most alarming one.

At this moment the Massachusetts State Board of Health

is instituting an inquiry into this question. Its circular states that, "Every year there is an increase in the reports to the State of the number of deaths from cancer, even when allowance is made for age and greater population. By some it is alleged that this is due to an increase of the disease itself; by others that better diagnosis and more careful registration will account for it. Furthermore, the infectious nature of this disease, caused by a possible parasite, and its contagiousness have been strongly urged." I believe that the great general increase of cancer is for the most part admitted and that Dr. Newsholme's idea that it is not a real but only an apparent increase due to better knowledge and more accurate registration of the disease is entirely erroneous. But, even were we to admit his views, it would not account for the fact that during the past 30 years the comparative cancer mortality of the sexes has altered in a most singular manner, so that whereas the disease was formerly more prevalent among females it has now become more prevalent among males, and is becoming increasingly so.

Now, do drunken habits account for more cancer? I am certain that confirmed drunkards are not more liable to it than other people. Besides, drunken habits are rather diminishing than increasing. Does syphilis account for it? I have never been able to trace any connexions whatever between syphilis and cancer. It is true that leucoplakial bald patches and specific surface ulcers of the tongue and mouth are places where epithelial cancers arise, but they do so, not in virtue of any special syphilitic taint, but just as they arise from irritation of any kind, as from a sharp-edged tooth. Mr. Williams, out of 165 female patients suffering from cancer of the breast, did not find a single one of immoral character. Do bad water, bad housing, and bad sanitary arrangements account for it? This is impossible, for in nothing have we improved so much as in improved sanitation—in improved water-supply, drainage, and in housing and clothing. Will increased nervous tension from our rapid existence due to the development of steam and electricity account for it? It would seem reasonable to suppose that this cause is likely to produce all sorts of nervous troubles and arterial or cardiac degenerations, but not cancer. Is it due to the fact that there is a great saving in the early periods of life and that more people live into what may be called the cancerous age? The Registrar-General's statistics show that the number of persons of 25 years of age and upwards out of every 1,000,000 living persons was just the same in the decade 1881-90 as in the decade 1871-80. There has, therefore, been no increase in the proportion of persons who live into the cancerous age.

What great change, then, has taken place in the national life? Richer and more abundant food. You will note particularly that it is the male who eats the heavy food in ever-increasing quantities, while the female remains much as before in her eating, and note along with this that it is men now who suffer most severely from cancer and not women as formerly. Again, in all England the most tainted places are London, the Thames Valley, and the counties adjoining the metropolis, where the most luxurious habits and the best living prevail, and it has been pointed out that, even in the capital itself, the parts where those in easy, comfortable circumstances, who are supplied with more than the necessaries of life, abide show the highest mortality. It is curious to note that amongst the very highest mortality rates for occupations are those which include commercial travellers, coachmen and grooms, merchant seamen, maltsters, brewers, innkeeepers, butchers, and plumbers. Most of these certainly are persons likely to eat and drink abundantly and not take too much exercise—persons who live well and do not work off their spare products. Singularly enough, medical men figure low in the list.

In conclusion, let me quote Mr. C. H. Moore's statement, made many years ago, that "cancer is eminently a disease of persons whose previous life has been healthy and whose nutritive vigour gives them otherwise a prospect of long life."

### THE PARAMOUNT IMPORTANCE OF EARLY DIAGNOSIS.

As one goes on seeing case after case with gentlemen in general practice one gets to find out that, even with the highest standard of modern education, a great, many errors are still being committed by medical men in the matter of the early diagnosis of mammary cancer. Now, seeing that in the matter of its cure we have nothing but free removal to fall back upon the smaller the amount of disease the better the chance of cure. Early diagnosis is therefore of paramount importance. If this can only be steadily crammed into the minds of students and practitioners a remarkable increase in the number of permanently successful operations will ere long result. This is the real line of improvement at the present moment—not in devising extravagant operations for cases that are past praying for. It is true that in the very early stages of a mammary cancer a certain and positive diagnosis cannot be made, even by the most skilled and experienced surgeon. Nobody, therefore, expects that of the general practitioner, but I have found that when the patient comes and shows her medical adviser a small lump in the breast, if it does not seem anything very formidable he is unwilling to frighten her, talks vaguely about a "swollen gland," and generally is apt rather to make light of the matter. There is a phrase I know well which must have cost a great many people their lives, "If it doesn't bother you don't bother it." It is a most destructive axiom. Then the patient goes home, the lump grows and she sees it growing, but she buries her head in the sand and repeats to herself that her medical man did not attach any importance to it and so nothing can be going wrong. In due time she becomes terrified and repairs to her medical attendant. There is a distressing scene, and they then repair together to the surgeon, who says that he thinks he can get the disease out but he is not sure. Now what I would implore my brethren in general practice to do is to cease regarding any lump in the breast, however small, as harmless or unworthy of the utmost attention. No man can tell what is going to become of a small lump in the breast. All strangulated herniæ are now operated upon without delay if they will not go back, so all lumps in the breast ought to be cut out if they will not speedily disappear. As to frightening the patient, there is no necessity for unnecessarily alarming her, but, even if it were so, how much better that she should get a needless fright in the beginning than be ultimately terrified by the dreadful intimation that her doom is sealed and that a brief period of agony is all of life that is left to her. My advice to a general practitioner would be that when a patient comes to him with the smallest lump in the breast he should at once send her to a surgeon. If she be a poor person he will assuredly have a surgical friend who will see her gratuitously for him. If I were a younger man I dare not say this, but I can now. If an absolutely certain diagnosis cannot be made on the moment the point is to get the patient to visit the doctor month by month to let him see what is happening to the lump. It seems hardly credible, but on several occasions I have seen a patient in consultation with her own medical man about an early mammary swelling. It has been impossible just then to give a certain opinion about it. Treatment has been suggested, and a strong recommendation made that the swelling should be carefully watched, and yet, after a year or more has elapsed, they have so muddled up matters between them that the patient has been brought back with a pronounced cancer. This is a statement of fact and not an ideal picture. We have just been considering various conditions relating to cancer upon which have been brought to bear ingenious speculations, supported by statistical researches involving years and years of labour. All these researches are not of the faintest moment (considering the nature of the solitary method of treating cancer of the breast which we possess) compared with the value of early recognition of the disease. Every effort should be made by teachers to inculcate the doctrine of early recognition upon students, for if there is a hopeful day to come for the sufferers from cancer of the breast it will be when women have been taught by the medical profession to present themselves on the slightest symptom of anything being found wrong with the mammary gland. Too often at present they hug their distressing secret and only part with it when it cannot be concealed and small wonder it is when one reflects that the present generation are still under the influence of the depressing tales told them by their mothers about the horrors of cancer of the breast, and the terrible and useless operations performed for its relief. I hope that my medical brethren will forgive my speaking in this very forcible manner about what appears to be a very simple thing. It is a very simple thing, but, simple as it is, it is the real secret of the future of the operative surgery of cancer, and we are not getting what we

ought out of it. Let me not be supposed to reproach my profession with ignorance (for I trust I can recognise the many mistakes I have made myself), but to expect omniscience from the general practitioner is absurd. I consider that the range and extent of his knowledge is astonishing, but the early diagnosis of many mammary enlargements will defy the most experienced touch. It is only by early coöperation between medical attendant and surgeon that the patient's chances can be saved to her.

### CONSTITUTION AND HEREDITY.

One of the terrible mistakes of former days, which gave cancer the character of being even more hopeless than it is, was the idea that it was purely a constitutional disease. To remove it in one place was useless, for it would just break out in another. Now the modern scientific inquirer, whose first consideration is too often to sweep contemptuously aside all that his predecessors have excogitated, asserts that there is nothing constitutional whatever about cancer—that it is a purely local disease, and that it is certainly an infective one. It seems odd why there should be any difficulty about the question. It a long time since Laycock first described the diathetic tendencies of the body and how they influenced all the illnesses which attacked that body on its way through life and often so modified them that they were almost unrecognisable, so changed were they from their usual types. Paget used to draw our attention very vividly to the remarkable way in which the gouty diathesis affected surgical disease. We know, nevertheless, that it does not necessarily follow that because a man has a diathetic tendency, it need ever become obviously manifest. He may go through a long life and never show it until some *contre-temps* brings it to the surface. An old friend of mine, whose male relatives to a man were full of gout, lived to over 70 years without a trace of it. He drank champagne and port most days, but he was small and thin and a passionate sportsman, so that he staved off the gout by great physical exercise. At last one day he fell off his shooting pony and hurt his ribs, and while lying in bed recovering from the injury he had a serious attack of gout in the foot. For the next two or three years of his life it never left him and it killed him with acute cerebral trouble at the last. If in place of "gout" we were to put "cancer" into this little case there would be really no difference. But that cancer should in some way be set agoing in a particular spot of a perfectly healthy man's body by the process of infection and should then produce a constitutional state—apart from mere spreading by lymphatic channels—is with our present knowledge difficult to realise. If you were to take a fine, wholesome, clean-blooded man, the descendant of a race who had for generations been free from all morbid diathesis, and put tubercle into him you could not make it spread. It would die out locally. It requires a distempered constitution, like a sour, impoverished soil, to give the appropriate pabulum for pathological weeds, which seed and spread through it and ruin it. We know now how the tubercle weed gets sown. The cancer weed may yet be caught and bottled too. When we think what an absolute revolution has taken place in our views about tuberculous disease we must not despair about cancer. It is a curious thing, however, to remember that while the North Italian peasants regarded phthisis with the greatest dread as an infectious disease, scientific medical men were the very persons who scouted the idea. Long-continued experiences are worth something after all.

As to heredity, it behoves us to be very careful how much importance we are to give to this in a difficult case of diagnosis of a tumour of the breast where side issues have to be taken into account. By the public without doubt too much value has been always attached to it. The patient consoles herself with the belief that hers cannot be a cancerous tumour because nobody in the family was ever known to have such a thing. Unfortunately we can only put the matter in this way—that, while the want of history of a cancerous tendency inherited from her progenitors is no proof that the patient's disease is not cancer, the existence of it among several near relations is distinct evidence in the direction that it is so. There have been attempts made on certain abstruse developmental grounds to overthrow the possibility of the hereditability of acquired (diseased) variations, notably by the philosophical teaching of Weissmann, but nothing has come of them. A great deal of philosophical froth has been beaten up and much learned verbiage has been poured about, but I have never seen abstract philosophy do much in disease. Our knowledge, our most useful knowledge, has been gained empirically. Patient collectors of facts have told appalling histories of whole families who have died from cancer and have disseminated it among their descendants, which are now so numerous and well authenticated as to leave no doubt in the mind of any surgeon (not a philosopher) as to the existence of heredity, and what we have to do is to attach to it its appropriate value clinically, and by no means to consider that the absence of heredity is proof of non-malignancy in a tumour. It is true that, as a general rule, cancer in a family seems very erratic in its visitations and appears to jump over a generation, but we may take a simple view of the question thus as explaining these irregularities. What figures seem to show is that the inherited infectivity of cancer is not strong and dies out most likely at the end of a couple of generations. In the midst of a family among whom cancer was never known a healthy man develops (catches?) cancer and throws the gloomy pall of hereditary diathesis over his children and grandchildren. A son shows it but his children escape, while a niece—the originator's grandchild—shows it. The rest escape because the match has not been applied to the tinder, just like my friend who escaped hereditary gout till he met with an accident towards the end of a long life which set it ablaze in him. It is impossible to resist coming again and again to ask "What is the match?" Meantime until a very clear answer is given to this I see no occasion for throwing overboard what knowledge we already possess.

Dr. Boswell Park in his chapter on the Frequency and Nature of Cancer in the *Practitioner*, already alluded to, writes as follows:—Next with regard to the actual nature of this disease. First of all it is possible to sweep aside, with one or two possible exceptions, everything that has been brought forward until recent years as an explanation of this disease. The old theories of irritation, of perverted nerve-centres, of heredity, &c., cannot for a moment stand in view of the searching scientific methods of to-day. We have gotten as far as this at present, that we know that cells act as they do in producing the disease either as the result of some external or of some internal stimulus. The exact character of this stimulus is not yet certainly demonstrated, though things point more and more towards its parasitic—i.e., its potent living-influence." To the first part of this statement I entirely demur because I am so old-fashioned as not to have got far enough to sweep aside all that experience has accumulated until I have something to put in its place. With regard to the second part it seems to involve on the part of Dr. Park what an old Scotch judge called "a plain perception of the obvious." What we all want to know is "What is the match?" and there is no certain answer to that as yet.

As regards traumatism we are all very prone to produce some distinct reason why a disease should have come to us. That it should come spontaneously is a stigma upon the soundness of the constitution, and so we wish to find out a cause. The natural liveliness of the imagination in females makes it very difficult to apportion with anything like accuracy the exact amount of credence to be placed in their statements. I must say that I have never been able to make out that milk abscesses or the scars of incisions for them have ever been the starting points of cancer, and, curiously enough, although the patients have mentioned the existence of these things I do not remember having heard them distinctly and directly attribute their growths to them. After all, if cancer ever develops in inflammatory products it is in those of a very chronic and not in those of an acute nature. I never heard, furthermore, any statements from the patients that pressure from corsets or that irritation of the nipple by suckling had produced the complaint. On the other hand I have very often heard most clear and circumstantial histories narrated in which blows were asserted to have been the primal cause of the trouble. It has been held as an argument against the effect of traumatism that men are very much more liable to blows on the breast than women and most rarely have breast cancer. I very much doubt this. Take a number of men at 50 years of age and an equal number of matronly, full-bosomed women of the same age, and it stands to reason that the latter will get more knocks on the mammæ than the men. Moreover, they are always in the way of getting knocks from young children or from articles of furniture, such as cribs and bedposts, among which they are always working. Besides, what is a man's breast after all? A little mass of fibrous tissue with some rudimentary gland stuff in it the small

size of which would save it from many blows which a big, soft, vascular female breast must encounter. Moreover, it is contended that if blows caused mammary cancer the lesions would be multiple, but this just shows how things appear differently to different people, for I do not suppose that if a woman gets an injury to her breast she gets it in the form of a series of thumps all round so as to produce multiple cancers. I have received very succinct accounts from intelligent women of blows from pieces of furniture or kicks from young children in which there was pain immediately afterwards sufficiently severe to fix the exact place in the breast in the memory. Then the pain has gone away and they have almost forgotten the circumstance until some day a lump is found at the old site of injury. Were the allegation true that the injury directs the woman's attention to a tumour which is lying concealed in her breast already, then she would discover it at once on receipt of the injury, but this is not the history of these cases. The history is that of an interval after which the lump comes painlessly. Many of the patients whose histories I have ascertained were far too intelligent to have invented the story after finding the lump. Mr. Roger Williams says that in examining the cases of 137 women, one out of four made statements as to previous traumata. I should hardly have thought so many would have done so, for, supposing we put one half of them out of count at once as imaginary it would leave one case in eight in which there was not improbably some truth in the patient's statement. After the way in which the vulgar but rooted belief in the infectiousness of phthisis of the Italian peasant has, in the light of modern discovery, triumphed over the contemptuous disbelief of the whole world of medicine, I am not disposed to abandon all belief in the statements of women whom we will even admit to be anxious to find a cause for their malady. Constant repetition from different sources strengthens even a weak tale, provided the evidence be steadily in the same direction. I have investigated these stories too often not to feel that, stripped of all exaggeration, there is a distinct element of truth in them. Remember, I do not make any attempt to assert that cancers of traumatic origin are at all frequent, but I believe in the possibility, and, indeed, in the strong probability, of their occurrence. I cannot see anything irreconcilable with our pathological knowledge in the idea of a blow leaving behind it a certain limited area of chronic inflammation in which the gland epithelium should begin to grow and then burst its bounds, just as I am certain it does in chronic mastitis. Dr. Boswell Park says: "The supposed intimate relation which injury bears to cancer is of no more importance than that upon which the clinicians, and even the pathologists, used to place so much stress in tuberculosis. There are still those who claim that the predisposing cause of most tuberculous joint diseases is previous injury of some character and there are still those who look for a similar mechanical cause of cancer in virtually every case." I am not one of those who look for a mechanical cause of cancer in virtually every case, but I venture to say that there is no practising surgeon in this country who has much to do with joint disease who does not recognise the immense importance of wrenches, blows, and sprains in the production of the early inflammatory changes in and about joints which ultimately end in what is known as articular tuberculous disease. I was educated in exactly the opposite view—viz., that the tales which mothers told about injuries to their childrens's joints were all nonsense, and I was forced out of this belief by the irresistible arguments of experience.

One feels the more inclined to this view from the knowledge that acute traumatic malignancy is a well-recognised disease. Scattered throughout the medical journals are so many cases of its occurrence that no possible doubt can be entertained about its existence. In the *British Medical Journal* for 1882 are two short but very interesting papers on the subject by Mr. Barwell and Mr. Harrison Cripps, also a third by my friend Mr. Puzey of Liverpool detailing in a most interesting manner the history of a man who was struck over the sternum and in whom there was developed at the spot a sarcoma. It is true that, in all the cases which I have read about, sarcomata and not carcinomata supervened, and therefore the disease is rightly named "acute." But if injury will, so to speak, on the spot start into existence the swift-growing tumour of the connective tissue, why should it not at a longer interval give rise to the slow-growing tumour of glandular lining epithelium?

# THE SANITARY CONDITION OF IRISH NATIONAL SCHOOLS.[1]

BY ANTONY ROCHE, M.R.C.P. IREL.,

PROFESSOR OF MEDICAL JURISPRUDENCE AND PUBLIC HEALTH, CATHOLIC UNIVERSITY MEDICAL SCHOOL; EXAMINER, ROYAL UNIVERSITY; FELLOW OF THE SANITARY INSTITUTE.

THAT the health of the individual and the community depends largely on their surroundings being sanitary is now universally admitted. That this rule is specially applicable to the young is acknowledged by all sanitarians, and that therefore their schools, wherein they spend so many hours, should meet all the requirements of modern sanitation will hardly be contested by anyone devoting any consideration to the subject. The growing and undeveloped structures of children, their close contact in schools for a number of hours, their less power of resistance to cold and other depressing influences, all render them remarkably susceptible to the causes and spread of disease. An inquiry, therefore, into the sanitary conditions of our national schools is not alone interesting but of great practical importance. According to the last official report there are no less than 8651 of these schools in Ireland and on their rolls 808,467 students. I have for some years been making personal observations and inquiries into the sanitation of these schools; as, however, my sphere of observation has not extended over many parts of Ireland I will rely rather on the evidence of the inspectors of these schools and on official returns. These inspectors have had ample and extended opportunities of observation, they cannot be expected to be prejudiced against the system of which they form a part, and therefore when they speak so plainly of the insanitary condition of many of these schools their opinion may be trusted as impartial. I will now read some extracts from the reports taken from the last available report of the Commissioners of National Education.

Mr. A. Purser, head inspector, North Dublin Group of Districts, reports, Jan. 25th, 1898: "In my last report I referred to the necessity of requiring that schoolhouses should be suitable, kept in proper repair, and adequately warmed in cold and wet weather, and I again express as my opinion that 'the Commissioners should not tolerate the existence of national schools without offices unless under very exceptional circumstances, and should refuse salary for winter months if adequate fires for heating the schoolroom are not provided. It is not an extravagant supposition that a large part of the sickness among the children of the country is brought on by badly ventilated schoolhouses, combined with want of due warmth in wet and cold weather.' It is downright cruelty to have a schoolroom for the poorly clad children so cold that an inspector, even with a heavy overcoat on, feels chilled in hands and feet. But the providing of offices is not enough; they must be kept in a sanitary, clean, and decent state; and any serious neglect of this matter should be visited with heavy punishment where the fault does not lie with defective construction of these buildings. 'No credit is given, by the present system of paying teachers, for cleanliness, neatness, or ornamentation for house and premises; none for regard to the health and comfort of the pupils; none for the educative example of decency and order, so these are naturally neglected in a greater or less degree.' A considerable number of recently built vested schools that I have visited are very unsatisfactory structures, faulty in plan, unsound in construction, and, as a result, rapidly falling into bad repair. Within the last month I visited a pair of schools in the county Wexford, which had not been occupied a single week, built at the public expense by a grant of two-thirds of the nominal cost. It is probably no uncharitable supposition that these 'two-thirds' given by the Commissioners covered the whole cost of the building. The roof was not staunch; fittings, such as the boot-scrapers at the doors, had already given way; the woodwork was rough and unplaned and hence the varnishing will be of little avail in keeping it clean; it was also so fresh that the joints were everywhere opening; at the corners of the rooms where the ventilation tubes are placed one could see daylight through the wall and the

[1] A paper read before the Statistical and Social Inquiry Society of Ireland on Feb. 20th, 1900.

teachers were obliged to fill up the chinks with paper. This is certainly very far from satisfactory and coupled with the after-neglect which is common in country places in regard to school buildings calls for the application of some check. It is very unadvisable to allow the applicant to be the contractor for building the house for which he has received a grant. For the above defect the teachers are, of course, in no way responsible. But in many cases they do not pay as much regard to cleanliness, neatness, and order as is desirable—defects which, partly owing to this neglect and bad example, are only too painfully observable in the children as well as in the schoolrooms. With regard to the schoolhouses, I would suggest that the ceilings should be flat; that where the services of one or more assistants are likely to be available a class-room should be built for each, not the little cell that usually is provided, but a room nearly as large as the main room and able to contain the assistant's whole division."

Mr. Sullivan, LL.B., head inspector, Galway Group of Districts, reports, Feb. 10th, 1898: "As I have said, the attendance in most schools is comparatively good in winter. But this is only when the winter is mild. A very large proportion of the children of this province is poorly fed and very poorly clad. It is painful to see—as an inspector cannot fail to see—little groups of bare-footed boys and girls, miserably clad, trying to make their way on a winter's morning to the neighbouring school. In such cases one hopes that the schoolroom, when reached, may make these poor children warm and comfortable. Unfortunately, this is not the case. My experience—and it is extensive—is that the schoolroom which awaits most children after their walk over bleak roads or paths is a cold, cheerless apartment. Some sods of turf have been placed on the hearth and lighted, but as yet they give no heat, nothing but a mass of smoke. One day last January—and this day and the school may be taken as typical of many others—I was examining in such a cheerless room as that which I have above described. As the children came in they sat, quiet, melancholy, and miserable-looking, at the desks. I was glad to keep on my overcoat and I also had the advantage of moving about. The sods of turf—there were not many—though 'lighted' about 10 o'clock, smouldered away, but showed none of the usual appearance of a fire—no blaze, no heat—until 11.30. Even then the fire added little or nothing to the heat of the room, but owing to the presence of the children the room began to get moderately warm."

Mr. F. Eardley, head inspector, Londonderry Group of Districts, reports, February, 1898: "A great mistake was made in the erection of many of these houses: they were built too small. A floor space of eight square feet per pupil was quite inadequate, seeing that out of that area had to be deducted the spaces for doors unwisely opening inwards; for the teacher's rostrum, an antiquated encumbrance; for a demonstration board, which was unsightly and almost useless; and for a free space round the fireplaces, so that schools built according to scale for the accommodation, say, of 75 pupils, were helplessly overcrowded when that number attended. A glaring defect in most of the schools is the condition of the out-offices. In the country the schools would be better off without them as they are kept—offensive alike both to health and to decency."

Mr. Alexander, head inspector, Cork Group of Districts, reports, Jan. 27th, 1898: "Teachers are required by rules of the board—(1) to promote, both by precept and example, cleanliness, neatness, and decency; (2) to satisfy themselves by personal inspection every morning that the children have had their hands and faces washed, their hair combed, and clothes cleaned, and where necessary mended; (3) to have the school apartments swept and dusted every evening and whitewashed at least once a year; (4) to take every care to promote the health and comfort of the pupils; and (5) to impress upon the minds of their pupils the great rule of regularity and order—a time and place for everything, and everything in its proper time and place. I had to complain in my last report that so far as my observation extended these rules appeared to be very imperfectly observed. The experience gained during the past year does not enable me to qualify this statement—quite the contrary. Instances of culpable neglect of these important regulations have too frequently come under my notice. I visited the three schools in a large village not long ago at 10 15 in the morning. The weather was cold and wet. I found the teacher of the boys' school walking about doing nothing, while two boys were sweeping the floor and a third was endeavouring to light the fire. In the adjoining infants' school I found a few children huddling together in a cold, cheerless room. The mistress explained that she had been obliged to go in search of materials for a fire, hence the delay in commencing business. On a pouring wet morning in September last I visited the male and female schools in a certain locality at 9 30 and found neither of the teachers in attendance. The boys had to remain without shelter till 10 o'clock, and the girls till 10 15 o'clock, at which hours, respectively, the principals of the two schools arrived. In the case of another school the inspector of the district had to draw attention in 1895 to the filthy condition of the offices, and his successor found it necessary to do the same in 1896. I visited the school towards the end of 1897 and found matters worse than ever in that respect."

Mr. J. Moran, head inspector, Belfast Group of Schools, reports, Jan. 24th, 1898: "I have little to add to the few remarks on schoolhouses in my report of last year. Several are altogether unsuitable and some have no out-offices attached. I regret to find that some of the inspectors recommend, in special cases, a grant to a school conducted in an unsuitable house. Of course, we are told, this is only a temporary arrangement. A new school is to be built forthwith, or as soon as funds are available, but so soon as the grant is obtained no further steps are taken."

Mr. W. J. Browne, M.A., district inspector, Londonderry, reports, Jan. 29th, 1898: "In many instances the out-offices are damp and badly ventilated, with earthen floors."

Mr. H. Cox, district inspector, Coleraine, reports, Jan. 31st, 1898: "Ventilation, too, is another point that does not receive sufficient attention. It must be within the knowledge of all the members of the inspection staff that very often, instead of all the windows of a schoolroom freely admitting of being opened for ventilation, they are nailed so as to prevent this. I have often gone into a school where, after remaining only a few minutes, I have had a bad headache from having been obliged to breathe the foul, unventilated air. Is it a matter for surprise that in such schools the pupils become languid, inattentive, unreceptive; and that the teacher finds himself at the end of the day completely exhausted—to become eventually anæmic or worse?"

Mr. J. Chambers, B.A., district inspector, Strabane, reports January, 1898: "The remaining schoolhouses are as a rule substantially built, but the lighting and the sanitary arrangements of several of them are defective."

Mr. J. P. Dalton, M.A., district inspector, Belfast, reports, Jan. 31st, 1898: "And 21 schools have been enlarged. The evil of overcrowding is yet far from being abolished. The district, moreover, is still disfigured by the existence of some half a dozen schools of such defective construction and ill-chosen situations that they would bring reproach upon any district, while they form an exceptionally discreditable contrast to the great majority of the fine school buildings which are to be seen in every part of the city."

Mr. J. M'Neill, B.A., another district inspector, Jan. 12th, 1898, reports: "With regard to school buildings the general state of things is only fairly satisfactory. Schools vested in the Commissioners are of course well looked after and those vested in the trustees are also kept in fair repair. But several of the non-vested class are unsuited for schoolhouses. Of late years one or two of the worst have been replaced by proper buildings and negotiations are going on with respect to several others. About a dozen still remain that are only a degree better than ordinary cabins. Repairs to non-vested schools have sometimes to be made by the teacher; sometimes a concert is held and funds are raised. These extensions and repairs should if practicable meet with more encouragement from the department."

Mr. J. Ross, M.A., district inspector, Newry, January, 1898, reports: "In eight instances, seven being mixed schools, no sanitary provision exists. In a few instances the windows of the schools are furnished with diamond panes and the lighting is in consequence unsatisfactory."

Mr. W. J. McClintock, M A., district inspector, Cavan, reports January, 1898: "A considerable number of instances of unsuitable accommodation, however, still remain, and there are five cases in which the houses are extremely defective and the pupils suffer from insufficient light and from imperfect ventilation. The offices are kept fairly clean and the rooms are, as a rule, limewashed once a year, but the teachers are often remiss in their duty as to dusting—the walls and tablets afford indisputable evidence on this point. The want of an abundant supply of fuel is much felt in many localities, where no provision is made for a fire except the few turf which the pupils bring with them from day to

day. This circumstance, combined with the excessive moisture of the climate, makes the walls damp and renders many of the houses incapable of affording a high degree of comfort in inclement weather. In numerous instances the premises are very small or non-existent and the playground is the adjacent road or lane. This want of sufficient space outside has sometimes necessitated the erection of offices against the wall of the house—an arrangement which must be highly objectionable from a sanitary point of view."

Mr. D. F. Fitzgerald, B.A., district inspector, Ballinamore, reports January, 1898: "These will still leave 17 houses which cannot be decided otherwise than bad. They are, for the most part, wretched hovels, thatched, unceiled, with rugged clay floors, imperfectly lighted, and still more imperfectly ventilated, and provided with neither offices nor playground; they are poorly furnished, afford inadequate accommodation, and offer no facilities for teaching."

Mr. J. P. D. Lynam, M.A., district inspector, Templemore, reports January, 1898: "With some notable exceptions the school buildings and furniture in this district are very fairly adapted to their purpose. But there is almost universally an absence of taste, and even of cleanliness, which is much to be regretted. Even in some of the modern vested schools the walls are bare and grimy, the roofs cobwebby, the windows dirty, and the playground more like a pen for domestic animals than a place of recreation for young people. Bareness and squalor, unrelieved by any touch of care or adornment, are the prevailing features. The homes of the Irish peasantry are not remarkable for order and cleanliness, and at school they see little to improve them in this respect. A very small expenditure with a certain amount of trouble would be sufficient to make the schools neat and tasteful in appearance. There seems to be no way of remedying the present state of things, except by making the teacher's income depend to some extent on the appearance of his school."

Mr. J. F. Hogan, district inspector, Ennis, reports January, 1898: "In four of the small towns in this district new schools are needed. In the first case there is no chance of securing a site; the landlord will give nothing except at an exorbitant figure and the prospect of heavy costs deters the manager from availing of the compulsory powers for acquiring that site. In two others the site can be got now; local aid is forthcoming, but building grants are not available, and when they are the manager may not be able to secure the plot of ground. In the fourth case the buildings are not very bad but old-fashioned and falling out of repair; here, again, no grants are available. In these three cases, I fear, old unsuitable houses will have to be put up with for years to come. For schools classified as 'bad' in the annual returns of each district some steps should be taken—that is, when building grants are to be got—to support managers in securing local aid and to rouse the parents of the pupils from their apathy. Each inspector should be asked to furnish a list of these schools. These lists should be placed in the hands of an officer of the Board of Works competent to give a professional opinion on the state of building repair and sanitary accommodation. He would then visit each school and furnish a short report. These schools should then be placed in a special schedule published each year. No new appointments should be made in them, no monitors recommended, and according as vacancies occur they should not be filled in."

Mr. J. A. Coyne, B.A., district inspector, Tralee, reports January, 1898: "There are 13 schools without out-offices."

Mr. Louis Daly, M.A., district inspector, Mallow, reports March, 1898: "About two-thirds of the schools here are fairly comfortable and well warmed. Ventilation, however, during the school day does not receive due attention and I have very frequently to complain of neglect of this important matter. The practical rule on this subject could generally be much more effectively observed."

Now let us turn to another section of the official report wherein the schools are classified:—1. As regards the cleanliness of the out-offices I find that out of 8542 schools the out-offices are described as middling or bad as regards cleanliness in no less than 2068, and that in 823 there are no out-offices at all—a state of things both immoral and insanitary. 2. As regards building repairs I find that 2411 schools are reported as middling or bad. 3. Furniture and apparatus are reported as middling or bad in 2590 schools. 4. Premises and playground are reported as middling or bad in 2344 schools. There is no playground in 1577. 5. Space accommodation is middling or bad in no less than 1713 schools. These are important and certainly not satisfactory returns. I find also that out of 808,467 students on the rolls only 211 passed in the subject of hygiene. Moreover, in only one of the five training colleges is this subject taught, and of 843 internal students in these colleges training for teachers actually only three passed in it.

I think that I have shown conclusively that sanitary laws are neglected and outraged in many of the national schools in Ireland. The importance of this to the children, and to the community of which they constitute so important a part as the coming generation of our workers, is self-evident. I will not apportion the blame of the existing state of things. How far the Government, the Board of National Education, the managers, and perhaps in some respects the teachers, are each responsible, or conjointly so, I will not, at least on the present occasion, enter into; but this I do unhesitatingly say, that no shifting of responsibility can or should be allowed to hinder or delay reform. I hope the Press will direct the attention of the people and of our members of Parliament to the facts which I have laid before you, and that practical and immediate efforts will thus be made to do justice to our poor people and their children.

I wish to make here two acknowledgments. First, that the greatest credit should be given to the head and district inspectors for their repeated and emphatic condemnation of the sanitary abuses that come so constantly under their notice. It is too frequently the custom for officials connected with any system to overlook or hide the defects of that system. Their rising above this common fault shows that they are worthy, not alone of the confidence of their Board, but, of much more importance, of the public. Secondly, I fully allow and appreciate the improvements that have been made in many of the schools in sanitary matters, but I consider that this improvement in some schools is only an argument of what could and should be done in others. It might be interesting were I to give a summary of what has been done in school sanitation in America and in many continental countries, but already this paper has, I am afraid, exhausted your patience, so I must reserve it for some future occasion.

I will conclude by giving some suggestions towards reform that have occurred to me during my study of this question. I do not lay them before you as a complete scheme, but rather as hints towards the drawing of such. First, it is evident that the schools directly under the Board are better kept and inspected than those under their partial control. Secondly, the plans and inspection of new schools seem, in some cases at least, to have been defective. This is inexcusable and those responsible ought to be made answerable and care taken in the future that both plans and inspection are above question; at least, the public have a right to expect that the new schools will not perpetuate recognised sanitary defects. Thirdly, the keeping of the new structures in repair seems frequently, according to the reports, to be neglected. Fourthly, in the winter the schoolrooms should be warmed. If no fund at present exists for this purpose an application to Parliament should be made for a grant. Fifthly, a special sanitary report should be made and published of every national school by competent authorities—and where the sanitary defects are removeable they should be; when not, a new building should be insisted on. The cubic space for each child, the ventilation, the heating, the sanitary accommodation which should be available in every school, the state of the buildings and the dryness of the walls and roof, and the ground for recreation should be specially noted. It may be objected that there are no funds to meet this expenditure. Then apply to Parliament. No better use could be made of the public money. Sixthly, the instruction of our teachers in hygiene. It is quite evident from many of the reports that they do not appreciate at present the importance of this science. I have already shown the few who qualify in it; the subject should be made compulsory for all teachers, so that they may, in their turn, impart at least some knowledge to their pupils. Seventhly, the National Board ought to have a competent adviser to whom they might refer the many health questions that so frequently arise. The London School Board have such a referee and his use is shown by the valuable report published yearly by the Board giving the immense amount of sanitary work done. Many of the school boards throughout England have also appointed a medical sanitary adviser. Eighthly, the printing and circulation amongst the children of simple instructions in the elements of sanitation and the best methods of preserving their health and avoiding disease.

If such suggestions were adopted I have no doubt that the health of our children would be greatly improved and that the schools would be object-lessons in sanitation and cleanliness, which in many cases they certainly are not at the present time.

Dublin.

## A CASE OF RUPTURE OF THE BRACHIAL PLEXUS.

BY PURVES STEWART, M.A., M.D. EDIN., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE WESTMINSTER HOSPITAL,
AND
MAYO COLLIER, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE NORTH-WEST LONDON HOSPITAL.

CASES of rupture of the brachial plexus are somewhat uncommon and the following instance is of value, not only because of the remarkable extent of injury to the plexus, but also because it exemplifies several interesting physiological points.

A man, aged 33 years, was admitted into the North-West London Hospital in the early morning of Sept. 6th, 1899, in a state of semi-consciousness. He had been found by the police lying on the road, apparently having fallen from a machine road-brush that was in the vicinity. No one witnessed the fall and it was only elicited some days afterwards that he had been in charge of the machine. On admission the patient was only partially conscious; he was noisy, struggling, and difficult to manage, but he did not show any evidence of having been drinking. There was a wound of the left side of the head in the parietal region which apparently involved the scalp only. No fracture of the skull could be made out. The house surgeon did not detect any paralysis of the face or limbs at the time, though it is certain that the right upper extremity must have been paralysed. The right pupil was, however, observed to be smaller than the left. There was a contusion extending from the side of the neck on the right side over the right shoulder to the front of the axilla. There was no other evidence of injury. The semi-consciousness and restlessness soon passed into a quiet coma. He was watched for signs of increasing compression of the brain, but the coma gradually passed off and at the end of a week the patient was quite conscious. He then stated that he had not had anything to drink for many hours before the accident. He remembered pulling up at a coffee-stall and then starting off again, but after that he remembered nothing. The patient's wife stated that he was subject to epileptic fits at long intervals. His right arm and hand remained severely paralysed, no improvement whatever ensuing.

On examination on Nov. 13th, 1899 (ten weeks after the injury), the patient was found to be a healthy-looking man of fair intelligence. His right upper extremity was obviously totally paralysed. He had a bald patch over the right parietal eminence, the result of an old injury which he had received eight years before, possibly during an epileptic fit. The optic discs and all the cranial nerves appeared to be normal and there was no motor or sensory abnormality of the face, trunk, or limbs, with the exception of that in the right upper extremity. All external ocular movements could be executed to their full extent. There were, however, slight horizontal nystagmoid jerks on turning the eyes to the left or upwards, but none on looking to the right or downwards. The reflexes in the lower limbs, both superficial and deep, were normal. No abnormality could be detected at the root of the neck on either side. There were no swelling and no tenderness on palpation, but passive abduction of the right shoulder was painful.

With regard to the cervical sympathetic the pupils were unequal, the right (three millimetres) being slightly smaller than the left (four millimetres) (see Fig. 1). They contracted normally to light and during convergence. Both pupils dilated when shaded but the dilatation was distinctly better marked, both in degree and in briskness, on the left side than on the right. On pinching the neck the cilio-spinal reflex was absent on the right side but normal on the left. The right eye was a little sunken and the right palpebral fissure was distinctly narrower than the left (see Figs. 1 and 2). On dropping a few minims of solution of cocaine, however, into the right pupil it dilated well and the palpebral aperture widened.

Examination with regard to the sensory functions revealed that there was absolute anæsthesia to touch, pain, and temperature over most of the right upper extremity, the anæsthesia including the entire hand and forearm and extending far up the upper arm. Two strips of normally sensitive skin survived, however, one on the front of the upper arm (see Fig. 2) over the upper part of the biceps muscle, the other on the inner and back part of the upper arm over the triceps. A narrow "tongue" of anæsthesia ran upwards along the axillary side of the arm, separating those two areas (see Figs. 3 and 4). There was complete loss of sense of position on passive movement at the right elbow, the wrist, and the fingers. The sense of position was normal at the right shoulder and at all the other joints of the body. When the patient moved his right arm passively by means of his left hand he felt as if he had a "phantom right hand" hanging constantly by his side with its palm facing backwards.

As to the motor functions, the movements of the scapula were apparently normal although the right trapezius seemed a little weaker than that on the left side. The patient could brace back both scapulæ equally well, bringing the whole vertebral border of each scapula towards the middle line—i.e., the rhomboid muscles were normal. The inferior angle of the right scapula at rest was a little more prominent than that on the left side (Fig. 3), but there was no "winging" of the scapula on pushing forwards against resistance when the arm was held horizontally forwards (i.e., the serratus magnus was not paralysed). The right shoulder was distinctly flattened from wasting of the deltoid, the pectoral muscle was wasted, and the supra spinous fossa was hollowed out (see Figs. 2 and 3). Immediately below the right acromion process there was a gap into which the finger could be put, which was due to downward displacement of the humerus. This gap disappeared temporarily when the elbow was passively supported, but it reappeared at once on withdrawing the support. The distance from the acromion process to the external condyle of the humerus when the limb hung unsupported was two inches more on the injured side than in the sound limb (see Figs. 2 and 3). There was absolute flaccid paralysis of the right shoulder, elbow, wrist, and fingers. The muscles were soft and flabby, and the limb dangled loose in a flail-like manner. The latissimus dorsi was paralysed on the affected side and, unlike its fellow, could not be felt to contract when the patient coughed. The supinator and triceps jerks were absent in the paralysed arm, whilst on the left side they were both brisk.

The state of the electrical reactions, &c., was as follows. There was no reaction to the strongest faradaic shocks in the right pectoral, the deltoid, the biceps, the triceps, or any muscle of the upper arm, the forearm, or the hand. The right trapezius reacted normally. The right deltoid, the biceps, and the extensor muscles of the fingers being selected for testing with the galvanic current, they showed marked diminution of excitability with sluggish contraction, ACC being > KCC. The skin of the right hand was red and congested and was much colder than that on the sound side. There were no cracks, ulcers, or other trophic changes in the skin or nails.

There are several points of considerable interest in this case. With regard to diagnosis, the fact of the patient being admitted in an unconscious state with a bruise on the left side of his head and with paralysis of his right arm suggested to some observers that the paralysis was due to a cerebral injury. The profound anæsthesia of the limb, however, was against such a theory; moreover, the paralysis was of a flaccid type, unlike the rigidity of a cerebral paralysis. Subsequent examination showed the presence of marked muscular atrophy and of the reactions of degeneration. Such a combination of anæsthesia, motor paralysis, and muscular atrophy pointed at once to an extensive lesion of the peripheral nerves supplying the upper limb.

Eight weeks after his accident the patient had another epileptic fit in which all the limbs were convulsed, with the exception of the paralysed arm. This is of interest when it is contrasted with what would have been the case had the paralysis been due to an injury in the region of the motor centre for the right arm, in which case the convulsion would probably have affected the paralysed arm and might even have commenced there. The probability, therefore, is that

**Fig. 1.**

**Fig. 2.**

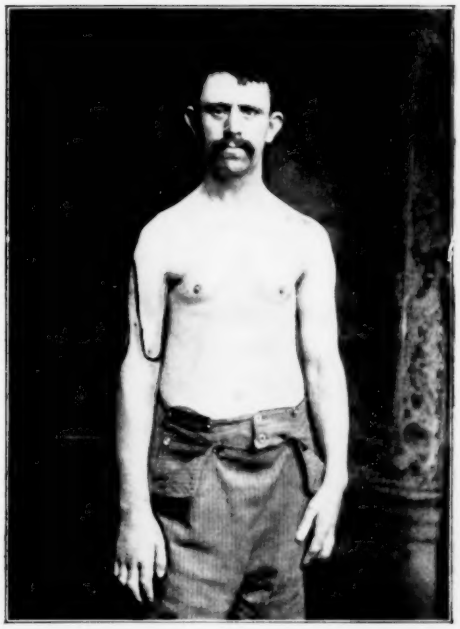


**Fig. 3.**

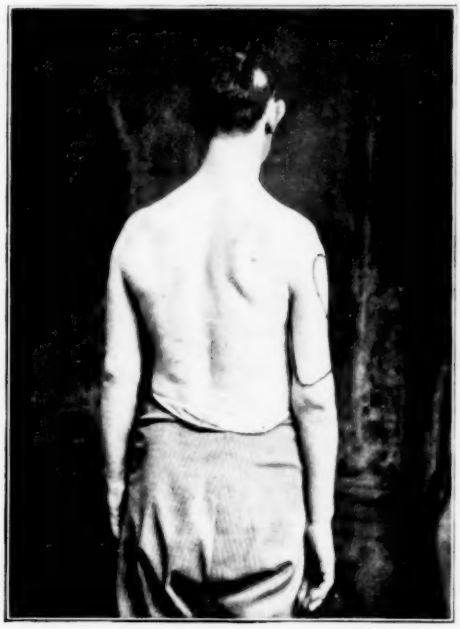
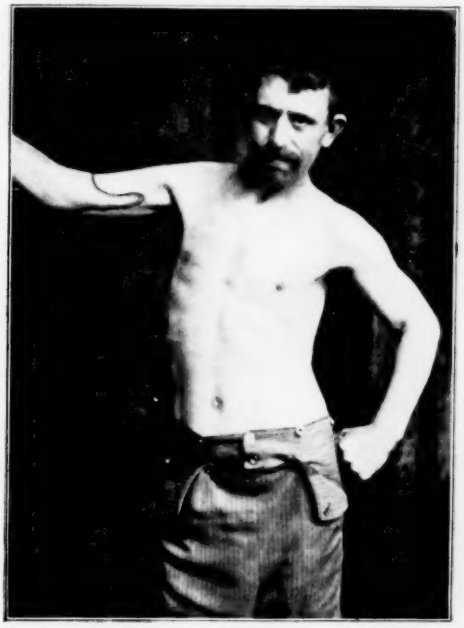


**Fig. 4.**



TO ILLUSTRATE A CASE OF RUPTURE OF THE BRACHIAL PLEXUS, BY DR. PURVES STEWART AND MR. MAYO COLLIER.

the patient sustained his injury by falling during an epileptic fit under his own cart, the wheel of which ran over his right shoulder and the lower part of his neck.

The accompanying diagram of the brachial plexus will serve to recall the chief anatomical distribution of the plexus. It will be observed that in this case the nerve to

C 5, C 6, C 7, C 8, Anterior branches of the four lower cervical nerves. D 1, Anterior branch of the first dorsal nerve. A, Supplying rhomboid. B, Supplying supra- and infra-spinati. C, Supplying subclavian. D, Supplying pectoralis major. E, Supplying serratus magnus. F, Branch to pupil and orbit. G, Phrenic nerve. H, Supplying subscapularis. I, Circumflex. J, Musculo-spiral nerve. K, Musculo-cutaneous nerve. L, Median nerve. M, Ulnar nerve. N, Internal cutaneous nerve. O, Lesser internal cutaneous nerve.

the rhomboids and that to the serratus magnus escaped, whilst all the other muscles supplied by the brachial plexus were totally paralysed. This proves that the lesion must have been one which affected the upper trunk (formed by the fifth and sixth anterior primary divisions) below the point where the nerve to the rhomboids is given off, but above the point of origin of the suprascapular nerve. The nerve of Bell, supplying the serratus magnus, arises by branches from the fifth and sixth roots respectively, which are given off before the fifth and sixth roots join to form the upper trunk of the plexus, so that a lesion of the upper trunk would leave the serratus unaffected, as was here the case. The seventh and eighth cervical and the first dorsal roots were all completely paralysed, and we can say definitely that the injury to the first dorsal root must have been close to its point of emergence from the inter-vertebral foramen, since there is distinct evidence of the partial paralysis of the cervical sympathetic (see Fig. 1) which receives its orbital fibres for the muscle of Müller, together with its pupil-dilating fibres, from the ramus communicans, this latter, as seen in the diagram, coming off from the first dorsal close to the inter-vertebral foramen before it has joined with the eighth cervical to form the lower trunk of the plexus. The lesion of the brachial plexus, therefore, was one which separated the nerve roots at the points indicated in the diagram, the fifth and sixth cervical roots having been torn across farther away from the spine than in the case probably of the seventh and eighth cervical and certainly of the first dorsal root. The distribution of the anæsthesia is very characteristic and is practically identical with that of a case under Dr. C. E. Beevor's charge which one of us (Dr. Purves Stewart) had the opportunity of studying over a year ago, in which, on account of brachial neuralgia, Mr. Victor Horsley excised the posterior nerve-roots from the fifth cervical to the second dorsal inclusive. After the operation there was a surviving strip of sensitive skin on the back of the upper arm, running towards the lower part of the triceps, as in our own case (see Fig. 3). In that case also the patient on passive movement of the anæsthetic limb felt as if she had a "phantom arm" whose posture never changed.

The narrowing of the palpebral aperture and the smallness of the pupil on that side, with its deficient dilatation to shade, together with the loss of the cilio-spinal reflex, pointed clearly to a paralytic affection of the cervical sympathetic owing to interruption of the fibres of the ramus communicans of the first dorsal nerve. We were, therefore, prepared to have found on examination, ten weeks after the injury, that cocaine would fail to stimulate the sympathetic. Such, however, was not the case, for cocaine was still able to cause dilatation of the pupil and widening of the palpebral aperture. This is in favour of the statement that lower nerve roots, the second and third, according to Quain (tenth edition), also supply pupil-dilating fibres to the cervical sympathetic, in addition to those supplied through the first dorsal root.

Harley-street, W.

## A SUGGESTION FOR A METHOD OF OPENING THE PERICARDIAL SAC, FOUNDED UPON A CASE OF PURULENT PERICARDITIS.

BY CYRIL OGLE, M.B. OXON., F.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO ST. GEORGE'S HOSPITAL;
AND
HERBERT ALLINGHAM, F.R.C.S. ENG.,
SURGEON TO THE HOUSEHOLD OF H.R.H. THE PRINCE OF WALES;
ASSISTANT SURGEON TO ST. GEORGE'S HOSPITAL.

A MAN, aged 36 years, according to his wife's account suddenly complained of tightness of breathing whilst shaving himself on April 12th, 1899, and was subsequently sick. No previous illness was known of and in particular no rheumatism. He was admitted into St. George's Hospital on the 17th with delirium, dyspnœa, and orthopnœa. His face was anxious, dusky, and pale. There was nothing heard in the lungs to account for these symptoms. A large area of præcordial dulness was found extending to the left anterior axillary line and to about two inches to the right of the sternum. No cardiac impulse was felt and no friction was audible, although friction had been heard by a medical man before the patient was admitted into the hospital. Leeches were applied to the region of the heart and the man was bled to 10 ounces. On the 19th he was transferred to my care (Dr. Cyril Ogle). There was then considerable distress of breathing with orthopnœa, suggesting a cardiac origin; a pinched, pale face with lips slightly blue, and not in the least bloated, although both external jugular veins were very distended, not altering during inspiration, and without visible pulsation or even flicker, but they contained liquid blood. There was no œdema anywhere, nor did any subsequently appear in the slightest degree. There was no ascites, and the liver was not apparently enlarged. The area of præcordial dulness measured about eight and a half inches in width at the level of the fifth cartilage, being limited to the left by the anterior axillary line and extending upwards to the second left intercostal space. Over this area no trace of friction was at any time to be heard whilst the patient was in hospital. In the sixth space and left anterior axillary line a feeble impulse could be clearly felt and was also perceptible in a diffused fashion between this point and the sternum. There was good resonance to the bases of both lungs behind, but breath-sounds were somewhat choked with medium-sized and fine râles, rather crackling in character, on the left side. On the left side near the spine, at about the middle of the lower lobe, was a patch of relative dulness. Here no alteration from vesicular breathing was to be heard and no change in voice-sounds. The pulse was steady and regular, with a small wave, but of a shooting character; the arterial tension was very low, and both ulnar and radial arteries at the wrist were plainly perceptible and flashing; in both respects the pulse closely resembled that of aortic regurgitation. The temperature was about from 100° to 101° F. and continued so raised. During the next three days the patient's condition remained without much change. The impulse of the heart in the anterior axillary line and inwards, however, became more evident, and the heart-sounds were heard in this region, faintly but quite clearly. The first sound was very short in character. No murmur was ever heard and no friction. There was restless, wandering delirium; simple questions were apparently grasped, but the mind then immediately wandered again.

The diagnosis seemed to be between pericardial effusion

with unusual signs and that of enlarged and dilated and, perhaps, fat-laden heart, with very probably clotting in the right cavities. On the whole I was inclined to take the latter rather than the former view, for the impulse of the heart was very fairly perceptible, and right out in the anterior axillary line; the sounds were audible, the first short and snapping, as is found in dilated heart; there was no extension of dulness to the left beyond the impulse; the character of the dulness over the sternum was not the dead dulness usually associated with pericardial effusion, but rather suggested that of the heart behind the bone; the orthopnœa was distinctly of the type seen in pulmonary embolism, and together with the distension of the jugular veins, which did not pulsate, suggested clotting in the right auricle or ventricle as its cause; and there was never any friction audible, at any rate since his admission. The low tension of the pulse with its shooting character suggested pericardial effusion, and the dull patch at the back of the left lung has been, of course, observed in this condition; but the character of the pulse would be equally well explained by clotting in the right heart preventing the blood from properly reaching the left ventricle. The dull patch at the back was there if looked for, but was not very definite, and there was no tubular breathing or change of voice to suggest much compression of the lung by a distended pericardial sac. It was consequently decided not to operate but to watch the condition of the patient. The impulse on the 21st and the 22nd became even more definite, although no decrease in the size of the dulness could be made out. Delirium and orthopnœa persisted. Strychnia and digitalis with oxygen inhalations were administered. The pulse-rate continued at about 120 and of the same shooting character, but on the 23rd it rose, with a tendency to run, and became somewhat irregular; it was therefore decided to operate immediately.

Mr. Allingham accordingly made an incision along the fifth left cartilage, two inches of which he removed, and then, carefully dissecting down to the pericardium, opened the sac. Thin, non-offensive pus spurted out with considerable force and to the amount of 15 or 16 ounces. There were great masses of tough lymph in flakes adherent to the heart and lining the sac. These were as much as possible loosened by introducing the finger into the pericardial sac and firmly scraping the heart's surface where it could be reached, and thus four or five ounces were removed, but much remained at the back and base of the heart, where it could not be reached by the finger. The sac was then freely irrigated with hot water, the edges of the pericardium were sewn to the skin, and the sac was left open to secure good drainage. During the process of handling and forcibly scraping the heart with finger and sponges, there was no intermission in its beat, and the pulse, which immediately before opening the sac had been nearly imperceptible, became regular, strong, and of very fair tension and so continued as long as the heart was being cleansed. After the operation, although much better than before, it declined somewhat in strength and fulness. The man's distress of breathing was somewhat relieved by the operation, so that he was able to lie down in comfort, but he lived only for 14 hours, dying from gradually increasing weakness.

At the post-mortem examination it was found that the pericardium and both lungs were strongly adherent to the chest wall. The lungs were œdematous and the left lower lobe was in a condition of partial collapse. The branches of the pulmonary artery throughout the right lung were plugged by firm ante-mortem clot. The pericardial cavity was of large size and the heart was of about normal volume, with a good thickness of muscle, which, however, was very soft. The surface of the heart was clogged by layers of coherent lymph, which also had constricted the right auricle and obliterated its appendix. The apex of the heart was much displaced downwards and outwards, as it was very firmly adherent to the lower and left part of the dilated parietal pericardium. This adhesion was evidently not of recent date; at the posterior surface of the base of the heart, also, there were some firm adhesions. The valves were healthy. The origin of the pericarditis appeared to be a collection of inspissated pus lying close to the right of the sac between it and the lung and the chest wall which was the result of a previous pleurisy. The kidneys were healthy except for cloudy swelling. The spleen was small and firm but the liver was rather large and nutmeg in character. There were a few ounces of serum in the peritoneal cavity. The other organs, including the testes, were healthy.

The difficulties in the diagnosis of the case were thus in part made clear at the necropsy. The absence of friction and the septic condition of the patient were explained by the purulent character of the effusion; the persistent impulse of the heart, and its permanent position downwards and especially outwards was accounted for by the firm adhesion of the apex to the visceral pericardium, which also explained the fact that there was no extension of dulness beyond the apex beat. The shooting character of the pulse, with empty arteries, the great dyspnœa, and eventually death, were no doubt largely due to the extensive clotting in the branches of the pulmonary artery.

*Remarks.*—It must be admitted that the condition of pericardial distension was in this instance left too long unrelieved. This was due in part to the difficulties in diagnosis which have been already pointed out, but still more to not realising how freely the heart can be handled, not only without harm but with positive and very evident advantage, as was shown by the remarkable improvement of the pulse in regularity, strength, and tension during the process of cleansing the heart. Since such appears to be the result, we are led to think that the heart and pericardium may perhaps more frequently and with greater confidence be subjected to surgical treatment. If this should be the case it has occurred to us that a way of approaching the heart,

FIG. 1.

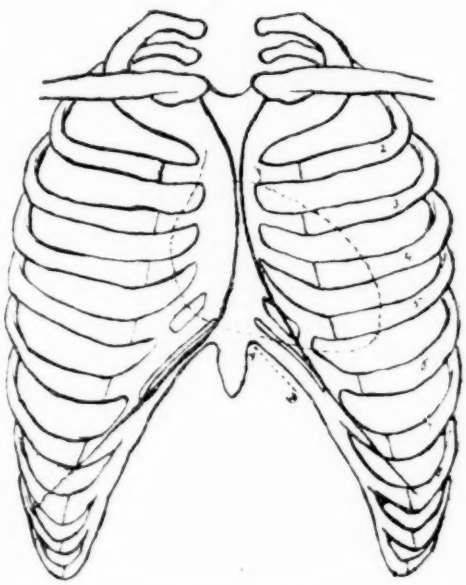


Diagram showing line of incision.

better than those hitherto employed, would be by opening the pericardium from below, through the diaphragm, so that a finger or sponges on holders introduced into the sac would be able to sweep round the entire heart, both back and front, over its whole extent, and thus detach and scrape away adherent masses of lymph, which are always a difficulty in the proper drainage of the cavity, and which must considerably hamper the action of the heart and more especially of the auricles. Up to the present time we have not had an opportunity of trying this method on the living subject, but we have performed the operation on the dead body in more than a dozen instances, and have found it perfectly easy to accomplish in the following way: 1. An incision of about three inches in length with its upper end at the costo-xiphoid angle is made along the lower edge of the seventh left costal cartilage; the latter is then exposed by separating the abdominal muscles from it; the cartilage can then be pulled somewhat outwards and upwards, when the fibres of the diaphragm become visible, together with the cellular interval between its attachments to the cartilage

and to the xiphoid appendix. 2. This cellular interval is enlarged by cutting or tearing through the muscle of the diaphragm as far as may be necessary, when a mass of fat is usually seen just above the diaphragm, in the space between the pericardium behind, the sternum in front, and the diaphragm below. 3. This fat, together with the diaphragm, is pulled downwards, when the pericardium presents itself and can be incised or opened up with forceps at its lowest part in front, and a large hole being made, a finger inserted can explore the heart over its whole extent, back and front, nearly as far as its extreme base. During the operation the peritoneum may to a slight extent be exposed as it sweeps downwards from the under surface of the diaphragm. It is, of course, not injured, but is pushed aside as is done in performing a suprapubic cystotomy. The superior epigastric artery is not wounded, but can be kept well inside, towards the middle line, on separating the tissues after cutting through the attachment of the abdominal muscles to the seventh cartilage.

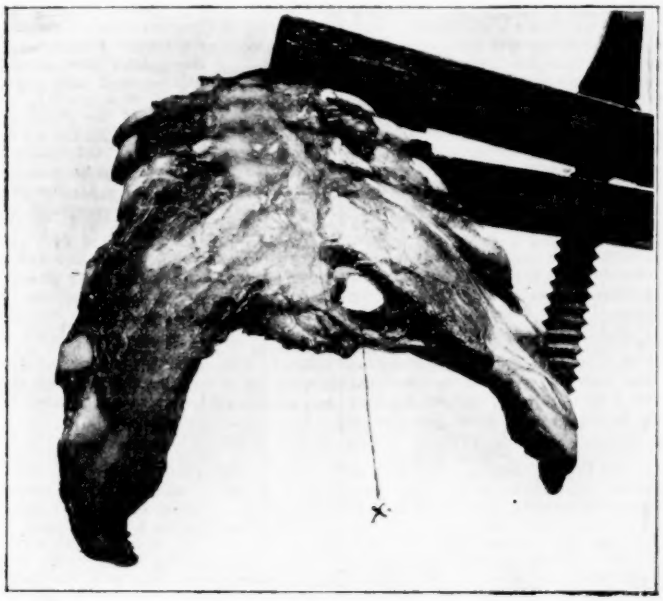
The advantages of the method appear to be: 1. The pleural cavity cannot be injured, as it is far away in the normal arrangement of the organs and would be still further removed in pericardial distension. It would seem, indeed, that the method described is the only sure way of entering the pericardium without wounding the pleura, for the latter frequently covers the fifth and sixth intercostal spaces, even up to the sternum. 2. Drainage is from the most dependent part of the sac, when the patient is half propped up, and is through a large opening not bounded by cartilage or sternum. 3. Great ease is afforded for the exploration and cleansing of the heart, both back and front, to its extreme limits.

Although the above operation is easy in a child or in an adult with flexible cartilages and ribs, it would appear sometimes necessary, when such is not the case, to remove two inches of the seventh cartilage after the first incision, as otherwise there is not sufficient room in the xiphoid angle to make a satisfactory opening. In other respects the stages of the operation are the same.

Fig. 1 shows the line of incision along the lower border of the seventh cartilage (A to B). It shows also the usual arrangement of the fold of the left pleura. This, however, would appear to vary considerably, but even in extreme cases never to reach lower than the upper border of the seventh cartilage close to the sternum. It could consequently not be involved in the operation, and if it be in an unusually low position it is easily recognised by the finger and can be turned aside in an upward direction.

Fig. 2 shows the result of the operation which was performed after death and subsequently displayed by dissection. No cartilage or bone was removed. The upper surface of the diaphragm (X) is seen, pulled downwards; above this the parietal pericardium with the incision, through which a finger can be passed. The seventh cartilage, somewhat everted and pulled upwards, is seen above. The reflection of the pleural sac upon the front of the pericardium is not visible and is a considerable distance from the incision into the sac.

FIG. 2.




Reproduction of a photograph from a dead body on which the operation was performed. The parts have been dissected.

## ON THE APPLICATION OF ELECTRICITY IN MEDICAL AND SURGICAL PRACTICE.[1]

BY H. LEWIS JONES, M.D. CANTAB., F.R.C.P. LOND.,
MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT IN ST. BARTHOLOMEW'S HOSPITAL.

[AFTER a few introductory remarks Dr. Jones said:—]

It is now 150 years since the beginning of medical electricity. During the whole of that time it has had to fight its way in the face of many difficulties, and the most serious of these has been the passive resistance of medical men themselves. The vitality which the subject has shown under adverse circumstances is most significant. Medical electricity advances steadily and the progress during the last decade has been very great. The commercial application of electricity and its house-to-house distribution by electric lighting companies have called into existence a large number of new instruments and new methods of treatment and are helping the spread of the study of medical electricity by simplifying the means of obtaining the current when required. The accumulator has been of great service

[1] Abstract of a paper read before the Institution of Electrical Engineers on March 8th, 1900.

by affording a trustworthy source of currents for the use of surgeons in their galvano-cauteries and exploring lamp instruments. The discovery of the x rays and their application to surgery and medicine have also done good to the cause of medical electricity by bringing electrical apparatus into more extended use, and the founding of x ray departments in hospitals gradually leads to the development of electro-therapeutic departments in places where these are not already in existence. Most of the London hospitals now have electrical departments, and these are of manifest utility. At St. Bartholomew's Hospital we have about 600 cases referred yearly to the electrical department from all quarters of the hospital, exclusive of the cases for x ray photography, the numbers of which are even greater. And the results of our treatment will compare favourably with those in any other branch of medical practice.

It is a little difficult to speak on a medical subject before a non-medical audience without incurring the suspicions of those who are always on the alert for signs of unprofessional behaviour, and there is no branch of medical practice upon which the fierce light of criticism shines more sharply than upon medical electricity. I shall therefore have nothing to say on such matters as the relation of cases, statements of cures and so forth, which might be thought to be unsuitable to my audience, but will try to meet you on the common ground of apparatus and methods, and in particular I shall try to lay before you some of the difficulties and problems which arise in the course of our medical work in the hope that some of them may be solved by the advice and suggestions of those who are here present. From conversations which I have had at various times with engineering friends I am disposed to think that the number and extent of the applications of electricity to medical practice are not generally realised by electrical engineers. Indeed, when I have observed any reference at all to medical electricity in the proceedings of this and of kindred societies the reference has usually been one of disavowal and dislike. I therefore feel that in making the present communication to you I am undertaking the task of trying to show that electrical applications have a large and legitimate field of usefulness in medical practice; that it is quite possible to practise medical electricity without thereby becoming an outcast; and that the advertisements of electropathic or magnetic appliances do not represent the position of medical electricity any more than, shall we say, Keeley represented all that was best and truest in electrical engineering.

If what I have to say to you may seem to be about trifling matters I hope you will bear in mind that our unit is the milliampère, while yours is the kilowatt, and that the currents which we handle and use would make but a small figure if their energy were expressed in terms of horse-power. Nevertheless, in the small technical matters which have to do with the management of various kinds of small electrical apparatus the medical man requires a thorough proficiency, because it is absolutely necessary that he shall be able to make his apparatus work. On that account we may appear in certain matters to take elaborate precautions which might seem to you to be hardly necessary. With our coils and batteries we require unfailing methods for increasing or decreasing the current sent through the patient, without stops or jerks. We have to deal with the electric light mains, either direct or alternating, or both. And we have evolved for ourselves a long array of contrivances for utilising the public supplies of electricity for medical purposes. Small transformers, portable accumulators, resistances to provide slopes of potential, which can be tapped as desired for varying voltages, contrivances for using the mains for all sorts of medical purposes, are all enlisted in medical work. The statical machine is also coming again into favour and to use a statical machine one must know enough about its management to be quite sure that after a patient's arrival there shall be no awkward failure of the machine to excite. Otherwise we are likely to be condemned as not understanding our apparatus and the patient may be lost. All these little matters can only be learned gradually and through a course of failures and disappointments. And when they have been learned thoroughly they constitute a very fair claim to the title of electrician.

The use of electricity in the production of hot-air baths with incandescent lamps or electrically heated coils of wire as the source of heat is a development of some promise; while in the immediate future we can see the approach of new methods of treatment by the light of the arc lamp. Each of these will demand a fresh extension of the field of electrical operations which the medical man will have to learn.

[Dr. Lewis Jones then gave a short *résumé* of the various uses to which electricity can be put from a medical point of view, laying special stress on its use for diagnostic purposes. He continued:—]

One of the most encouraging points at the present time in medical electricity is the improved quality of the scientific work which is being done in it. Last year, the French Government having declared the subject to be of public utility, a section of Medical Electricity was inaugurated at the Boulogne Congress of the French Association for the Advancement of Science. I attended the meetings of the section during the greater part of the congress and was struck by the number and high scientific quality of the communications which were made in it. It was one of the best attended sections of the whole association. France, indeed, takes a long lead in the subject of medical electricity. They have at the present time three periodicals devoted entirely to the subject and abundance of material seems continually forthcoming to fill the pages. One of them, the *Archives d'Electricité Médicale*, is quite indispensable to students of medical electricity, for, in addition to its original matter, it provides its readers with abstracts and a bibliographical index which keep one in touch with all that is being done in medical electricity all over the world.

The progress in the small matters of detail, particularly with regard to apparatus, which has taken place during the last 10 years is considerable. I say 10 years because that represents the time during which my attention has been specially directed towards medical electricity. It will be interesting to consider and compare the types of apparatus in common use to-day with those used formerly.

*Electrodes.*—The current is applied to the body of the patient by means of electrodes. These may be of the most varied forms, particularly with electrodes for internal applications. The cylindrical brass handles fitted with sponges and held, one in each hand, are obsolete, or deserve to be, and for most external applications their place is now taken by a plate of flexible metal enclosed in wash-leather, and a disc of metal also covered with wash-leather and screwed into a wooden handle. The former is called the indifferent electrode and serves chiefly to complete the circuit through the patient's body; the other or active electrode is the one which is manipulated and applied over the affected region. For testing the active electrode is fitted with a closing key. Examples of electrodes and other forms of medical electrical appliances are shown upon the table. Bare metal must never be allowed to touch the skin unless electrolytic or painful effects are desired. Sores are easily produced in a few minutes by a few milliampères of current if at any point the metal of the conductor touches the skin directly. For this reason some water-holding material, such as wash-leather, is always used to cover the metallic surfaces of medical electrodes.

*The battery.*—The chief requirements in a medical cell are that it shall need no attention and will not spoil on open circuit. The past few years have seen the almost complete disappearance from medical work of open acid cells, such as the Smee cell, the Bunsen, and the bichromate cell. Formerly, when electrical treatment had to be carried out by means of ponderous oak boxes filled with cells of one or other of these kinds, the trouble and the dirt associated with them were enough to discourage all except enthusiasts. At the present day the Leclanché cell is the only type of battery which a medical man need consider, and even these are rapidly being abandoned, except for fixed installations, in favour of the modern, cheap, and convenient dry cell. With these small dry cells for currents of small magnitude and with a few accumulator cells for those medical purposes which require a current of an ampère or more, as, for example, for the heating of galvano-cauteries and the illumination of small exploring lamps, the medical man is sufficiently equipped and is no longer compelled to handle and prepare caustic solutions. Large bichromate batteries still survive in remote districts for the occasional production of large currents, but they are every year becoming less numerous, as secondary cells and the means of charging them from dynamos become more general over the country. All this simplification tends very greatly towards the increased popularity of medical applications of electricity, because, perhaps, one chief cause of its neglect has been

hitherto the trouble of the management of the apparatus. The batteries needed for medical work divide themselves into two distinct classes, batteries for applying currents to patients for testing and treatment and batteries for galvano-cautery and lamp apparatus. The former is essentially a physician's battery, the latter is more for the surgeon. Most of the surgeon's requirements are met by a portable accumulator of four cells, for the little surgical lamps are for the most part eight-volt lamps, taking about an ampère, though usually they are overrun most cruelly. For galvano-cautery the currents average from five to ten ampères, but the cautery circuit has a low resistance and a pressure of eight volts is much more than is required. Sometimes the four-cell accumulator is arranged so that a switch will re-combine it as two sets of two in parallel for cautery work, or else it is left as a four-cell battery in series, the volts being expended in a resistance. For medical work a battery is fitted with from 25 to 40 small dry cells connected in series and having wires led off from them to a circle of studs from which a moving pointer takes up into circuit as many cells as are required. It is usually fitted with a milliampère meter permanently in circuit and a commutator for reversing the poles, also with an induction coil driven by a separate dry cell. The average working resistance of the human body and skin is about 2000 ohms when properly moistened with hot water. Salt or soda may be added to the water to reduce the skin resistance, but plain water is best as it corrodes the electrodes less.

Next in importance to the battery of primary cells comes the induction coil. Indeed, if generality of use be considered, the induction coil should come first, as it is the form of electrical application which has the widest employment. The medical induction coil has developed in certain special directions, the chief requirement with such an apparatus being a means of careful regulation of its strength. Of the various ways of obtaining this regulation the one best suited to our purpose is the plan of using a sliding secondary coil, which can be brought close to the primary or can be removed further from it, as desired. Much has been done of late years to improve the induction coil and more has been written about the various effects to be got from coils of different sorts and construction. Attention has been given to the improvement of the vibrating spring or contact-breaker, and the best American coils are now fitted with two vibrators, one of slow speed and one of high speed. In the United States, where the construction of electro-medical apparatus has been much elaborated, it is quite customary to supply coils with several interchangeable secondaries. The same is done to a less degree by makers elsewhere. The various effects which have been ascribed to different windings of secondary are best considered as being due to the very great differences in their self-induction, according as they are made with windings of great length and many turns or of short length and few turns. The slower rise and fall of wave which is found with the high self-induction of the long coil of many windings has the effect of making the shock less sudden and less painful in its effects. So, too, in very long, fine secondaries a large part of the volts are dropped inside the coil, and the E.M.F. at the terminals, though high on open circuit, may fall almost to nothing when closed through a comparatively low resistance. On this account very long coils with very high speed contact-breakers have been much written about as affording painless currents for internal applications, but in my opinion the painlessness is due to the fact that very little current comes out of them. For practical purposes I have usually found it sufficient to use one secondary coil, which is tapped at one-third of its length and so can give long coil and short coil effects from the one instrument. Medical induction coils are not fitted with condensers. When simple stimulation is required in the treatment of a case the induction coil is probably the most convenient and cheap method of procuring it. The battery current has a superiority in certain things; for example, it gives a wider range in degree and quality of stimulation; and certain living tissues respond better to battery currents slowly increased and decreased than they do to the sudden jerks of the coil. The intense effect of the coil on the sensory nerves of the skin makes it difficult to use coil currents of sufficient strength to penetrate to the deeper parts of the body, and for deep parts currents of large magnitude are necessary to make up for the weakening effect of diffusion.

The strength of current used in treatment ranges between four and 40 milliampères for the most part, though smaller and larger currents are sometimes used. The larger the currents the larger should be the surfaces of the electrodes. The measurement of induction-coil currents presents difficulties which have not hitherto been surmounted, and the rough comparisons which are made by means of a scale of millimetres at the side of the sliding secondary cannot be translated into units and cannot be trusted to be alike for two consecutive days. Instruments which measure the mean current are of no use because the physiological effect does not depend upon mean current but upon the rate of change and the maxima. The use of a sinusoidal current from a dynamo to take the place of the induction coil might enable one to evade the difficulty, but the dynamo current of the mains, in certain cases at least, produces such painful skin effects as to be very unpopular with patients. It is difficult to say why this is so, but the subject wants further study. Possibly the use of condenser discharges, the condenser being automatically charged and discharged rapidly, might meet the difficulty of producing a current which would resemble that of the coil in its physiological action and would allow of measurement. I would like to ask the advice of members of the institution on this point: Would not the curve of discharge of a condenser have a close resemblance to the discharge curve of an induction coil? Could not one arrange a condenser of small capacity, such as a Leyden jar of diminutive size, and employ some very fine adjustment of spark gap for measurement and regulation? I have thought that in this way, using high voltages and small capacities, the disturbing factor of varying skin resistance would become comparatively unimportant.

*Current from the mains.*—After its introduction into commerce the current of the electric lighting mains was quickly introduced into medical practice, and we make large use of it in the electrical department of St. Bartholomew's Hospital, which is connected with the mains of the City of London Electric Lighting Company. The current impulses from the alternating mains have a physiological action resembling those of the induction coil; that is to say, the effect upon nerve and muscle is to produce a permanent contraction so long as the current is applied. But it is superior to the induction coil in being a less violent stimulus to nerve and muscle by reason of the more even and gradual rise and fall of its waves. Larger currents can be borne than from the induction coil, and, judging from its effects in a long series of cases, it appears to be more thorough and more useful in its effects. Nearly all the cases formerly treated by the induction coil at the hospital are now treated by the current from the mains, the voltage being lowered to suit the requirements of the case (to about ten volts as an average), and indirectly we have gained largely in that the department is now free from the noise of eight or ten induction coils all vibrating and buzzing at once. Formerly the effect of that noise during a long afternoon was most trying. There is one marked difference in the effect of the alternating current which limits its use, and that is that if applied in the ordinary manner through moistened electrodes to the surface of the skin it has a peculiar, disagreeable, burning effect. The more thoroughly the skin is moistened the less this is noticed, and when the current is conveyed to the patient through the medium of water, as in a bath, this disagreeable cutaneous effect disappears entirely. Consequently a mode of treatment by means of baths and the sinusoidal current has been developed to a very considerable extent and with decided advantage to our patients. Large numbers of our cases are cases of paralysis of the upper limbs from injury or disease of the nerves of the upper extremities, and for these we use an arm-bath. The arm-bath is a stoneware trough, of suitable shape, having a metal electrode at each end; it is filled with warm water into which the patient plunges the forearm and hand. The use of hot water as a medium for conveying electricity to a patient has many advantages. The current is much better borne and therefore a stronger current can be used. Manipulation of the electrodes and personal handling of the patient are done away with and the affected part is kept warm during the application. For these reasons we use it largely and I continue to advocate its use as one which again is likely to increase the popularity of electricity among the medical profession because it tends to simplify its mode of application. In addition to small local baths for parts of the body we have a large bath in which the whole of the body is

immersed; and for general morbid conditions, as distinguished from local ones, the electric bath with the induction-coil current, or, better still, with the sinusoidal current of the mains, is an extremely useful contrivance. In that section of medical electricity which comprehends general applications for general systemic diseases—a field of work which is only now being thoroughly explored—the electric bath is perhaps superior to any other mode of applying general electrification. The other modes of doing this are by the statical machine or by the high-frequency and high-potential methods of Tesla and of D'Arsonval. The chief advantage of both these latter methods is that the patient need not disrobe; but, on the other hand, the electric bath has the great advantage that the currents which are being used can be more readily measured and adjusted to suit individual needs. Chance very largely decides the choice of one or other of these methods of general electrification. Whereas the sinusoidal current and the bath suits one medical man best, the other forms may be more convenient to the conditions of practice of another one. The electric bath, unfortunately, has been rather under a cloud during recent years, in this country at least, by reason of its association with those peculiar "massage" establishments which sprang up so thickly in London a few years ago. Now, however, most of these establishments have disappeared, and one may venture to speak of the definite advantages of the electric bath without feeling that one's words may reappear in the columns of some journal in association with advertisements of undesirable houses. At St. Bartholomew's Hospital, excluding arm-baths, about 1000 baths, mostly with the sinusoidal current, are given each year, particularly for diseases like debility, rheumatism, sciatica, neuritis, lead poisoning, and various forms of paralysis. No electrical department can be considered properly equipped without the electric bath, for in many morbid states its action is most valuable. The bath with direct current has also certain useful applications, although not so many as the induction coil of the sinusoidal current bath. The direct current bath, local or general, is useful in the relief of gout, rheumatism, sprains, chronic inflammations, and generally as an absorbent for the removal of fibrous adhesions or thickenings in or about the joints and limbs. It is also indicated in painful states when a varying current is too stimulating to be well borne, as, for example, in acute sciatica, neuritis with pain, and so on.

The alternating current of the mains also lends itself extremely nicely to such uses as for galvano-cauteries and for the small exploring lamps used by surgeons, and where alternating current is laid on they now for the most part have small transformers for use in this way. Instruments containing lamps and telescopes are now used for examining the interior of such cavities as the bladder and the stomach, which previously have been inaccessible to the sight, as well as for the illumination of more accessible parts, such as the throat, the ear, the nostrils, &c.

The arrangements at St. Bartholomew's Hospital for the distribution of our current from the mains consist of a transformer, tapped at intervals in its secondary winding and led to a row of binding-screws, from which any voltage, between half a volt and 50 volts, can be taken at will. The three rooms in which treatment is given are wired in three circuits as for electric lighting, and the voltage required can be switched on to any of the three rooms from the transformer. Thus we have at command low voltage currents for galvano-cauteries and small lamps, and higher voltage currents for applications to patients. We use three or four volts for cauteries, eight or 10 for lamps, and from 10 to 20 for the baths. Several of our old sledge-pattern induction coils with sliding secondaries are now converted for use as subsidiary regulating devices for the baths. I cannot say much of the use of direct-current mains in medical practice from personal experience. Although I have been instrumental in connecting three places to the lighting mains I have never been in touch with direct-current circuits. The use of the direct current from the mains for applications to patients and for other applications requiring low voltages is carried out either indirectly by means of charging accumulators from the mains and using them, when disconnected, for the patients, or else by means of shunt resistances. The latter method is to provide a resistance of several thousand ohms, which is connected across the mains. The resistance is a bare wire coiled on a support, and is fitted with a travelling contact-shoe which can be moved so as to tap the windings at any point. The patient is arranged in a shunt circuit in parallel with any convenient length of the resistance. When only small currents are required a lamp is arranged permanently in series with the wire resistance. The slope of potential which can be tapped at different points by the movements of the slider permit fine regulation of current in the shunt or patient's circuit. With shunt resistances of suitable magnitude current can be obtained for treatment, for working induction coils, or for galvano-cauteries. In the latter case the waste is considerable and it is my belief that an accumulator charged through a lamp would be much better, but in many cases the shunt circuit is preferred, in spite of its waste at the rate of more than a horse-power, whenever 10 ampères are wanted. Possibly something like a step-down induction coil might be devised for heating cauteries off the direct-current mains. One of the drawbacks of electric light supply is that those who have continuous current laid on cannot also have alternating. And so a medical man residing in a district supplied by direct current will have to generate any sinusoidal current needed by means of a motor dynamo. These instruments can be bought and are in use. On the other hand, a medical man supplied with alternating current will often sigh and wish that he could easily generate for himself a little continuous current. And here is a point which perhaps might be worth the attention of this society—viz., the contrivance of some simple rotary converter which could be attached to a lamp socket in a house supplied with alternating current, and which would give out continuous current, sufficient to recharge a portable accumulator from time to time. Not much would be wanted, and perhaps it is just on that account that the instrument I have indicated is not easy to get; presumably it would not pay to make it. Still, a little rotary transformer, which would give out, say, an ampère at ten volts of continuous current would be welcomed by many medical men who live in districts of alternating supply. The mechanical efficiency of the machine is in no way important considering the smallness of the needs. That which would be important with such an instrument is that it could be left to run for periods of an hour or two at a time without needing its owner to stand over it and watch it, and that it would not become over-heated or make a great noise.

*The statical machine*.—This form of apparatus—the first introduced into medical practice—is showing very decided signs of a revival. In the United States the statical machine is already very largely employed, and I am told that in New York alone there are no less than three firms busily engaged in turning out statical machines at the rate of two or three a week. Those who are only acquainted with the effects produced by small statical machines can have no idea of the difference between small and large instruments of this kind. The effects produced by a large statical machine are most decided, and it is only necessary for one to experience them once to see that treatment by them is by no means a mere treatment through the imagination. The most apparent effects of the statical machine are the profound and peculiar cutaneous sensory stimulation which can be produced by it and the forcible muscular contractions which can also be produced by it when the administration is in the form of sparks. Its special field of usefulness probably lies, first, in its action as a general excitant; secondly, in conditions of neuralgia and other superficial pains; and thirdly, in the conditions of muscular pain. In all these cases it acts quickly and thoroughly. It is quite common to receive a patient stiff and lame from lumbago or muscular rheumatism and to see him leave in 10 or 15 minutes quite free, for a time at least, from his lameness or his stiffness. All this promises to be extremely valuable. The difficulty of understanding how a simple electrification by the static machine can influence the body makes many of us disinclined to believe that there can be any effect; but after watching cases carefully for some time I can now say with certainty that some direct action does take place. I have only had a proper static machine for a year and a half and therefore still feel rather a beginner with it. A very interesting matter is that whereas on the other side of the Atlantic the influence-machine which is used is invariably a modified Holtz's, on this side it is the Wimshurst which is considered the best. The American Holtz machine certainly has been developed into a most beautiful instrument, and although it has one drawback when compared with the Wimshurst—that of

not being self-exciting—that is a point so easily got over by means of a small accessory exciting machine in the corner of the case as to have no real importance Size for size, I am disposed to believe that the Holtz gives a better output than the Wimshurst. It appears to be a more cheaply constructed machine and needs no counter shaft or cross-belts. Recently a large American Holtz machine has been presented to St. Bartholomew's Hospital, so we shall have an opportunity of testing and of comparing its work with that of a large Wimshurst machine which I have recently had constructed for my own use. As a good Holtz machine is, so far as I know, a curiosity in this country, I shall have much pleasure in showing our machine to any members of the institution who might wish to see it. The accessory apparatus and the technique of the statical machine have been very greatly simplified by the work of American physicians.

The application of high frequency currents to medical practice has not had much extension. In France it is used a little. The currents are taken from leads connected to the ends of the primary helix and no secondary coil is used. An induction coil is generally used to charge the Leyden jar condensers of the system. The applications are either by a sort of spark or brush discharge from one terminal to the patient; or the patient lying on a couch is attached to one pole, the other being connected to a sheet of metal under the couch. This is called the condenser bed. Finally, the patient may be enclosed in the actual helix connecting the jars and his body thus made the seat of induced currents by "auto-conduction." Its chief applications have been as a mode of general electrification, but the brush discharge is also applied locally to the skin, and has seemed efficacious in curing certain skin diseases.

*Ozone.*—The use of electricity for generating ozone for medical purposes is attracting some interest. It is not so much that these applications of ozone are entirely new as that the apparatus is now becoming sufficiently improved to make its applications easier. But the rapid development of electricity in so many directions of late years has given medical men just at present so many fresh things to handle that ozone in its medical applications is, as it were, waiting until someone has time to attend to it. The workers in medical electricity, in this country at least, are so few.

Perhaps the most striking of all the applications of electricity to medical work in recent times has been due to the discoveries of Professor Roentgen. The introduction of the x rays has revived very greatly the interest in medical electricity. The Roentgen-ray work makes a very considerable addition to the work done in our electrical department at St. Bartholomew's Hospital, as it is in almost daily use for purposes of diagnosis in surgical cases. Physicians hitherto have paid but little attention to Roentgen rays, but its application to the diagnosis of diseases of the chest must be mentioned as perhaps one of the most promising things for the future. Certainly it is possible to diagnose pulmonary consumption and some other diseases of the chest more satisfactorily, and at an earlier state of the disease, by the x rays than is possible with the stethoscope; and this one point alone appears to me to be of the highest importance. For example, recently I saw the x-ray photograph of a patient's chest. She was suspected of having pulmonary disease and was sent to one of my colleagues for an x-ray photograph; examination by the ordinary methods of auscultation and percussion had given an uncertain reply. But the negative taken with x rays showed without any possible doubt the presence of tubercles in the lung. If there were more time to spare I could go into the question of x-ray work more deeply on the grounds of its great development by medical practitioners, the localisation and stereoscopic methods of Mr. Mackenzie Davidson and others being singularly beautiful in their results; but I have the idea that most of us are a little sated with x-ray work just now, so I shall say no more except to refer to the extreme beauty of the fluorescent screen effects which are given by large static machines.

Wimpole-street, W.

DIPHTHERIA AT PONTYPRIDD.—At the quarterly meeting of the sanitary committee of the Glamorgan County Council, held at Cardiff on March 2nd, the medical officer of health reported that in the Pontypridd Urban District 160 notifications of diphtheria had been received for the quarter ended December last.

# TUBERCULOUS DISEASE OF THE KIDNEY: ITS ETIOLOGY, PATHOLOGY, AND SURGICAL TREATMENT.

BY DAVID NEWMAN, M.D. GLASG.,
SURGEON TO THE ROYAL INFIRMARY, GLASGOW.

(*Concluded from p. 606.*)

*Prognosis.*—In tuberculosis the prognosis is most unfavourable, and is especially grave when the disease is not limited to one kidney but extends to the ureter, the bladder, or the other kidney. When, however, the lesion is limited to one kidney or to only a part of the organ the outlook is more favourable. When localised the tuberculous material may become discharged, or it may dry up into a firm caseous mass, thereby becoming practically harmless, while the other kidney undergoes a compensatory hypertrophy. It is important to observe that in many cases considerable time elapses between the commencement of the primary tuberculosis and the invasion of other parts. It is by making an early diagnosis and by taking advantage of this interval that the surgeon can hope to save, or to prolong, the life of his patient.

A question now worth consideration is, Can spontaneous cure take place? Or at the best can the progress of the disease be only checked? The more we know about tuberculous disease in all its aspects the greater is the tendency to believe in the possibility of spontaneous cure. As there are individuals whose tissues have the power of resisting the inroad of the virus, so also a person who is already infected may acquire sufficient resisting power to check the progress of the disease. When the tubercle bacilli introduced into the kidney are small in number or weak in virulence the tubercles remain discrete, the bacilli may die in the struggle of the tissues against their growth and propagation, and sometimes the only trace of the contest may be small fibrous nodules embedded in the renal parenchyma. These small scattered nodules might escape observation entirely were it not that in other parts of the organ the tuberculous process has been more extensive and more considerable patches of fibrous tissue have formed containing more distinct remnants of tuberculous products. Complete disappearance of the tuberculous material and its replacement by fibrous tissue which contains no infective material must be looked upon as the closest approach to a spontaneous cure, at least as far as local development of the disease is concerned.

Fig. 10 shows a right kidney atrophied from tuberculous disease, entire and divided in section. It weighed one ounce, was embedded in a mass of adipose tissue, and at its upper extremity was a small cavity with smooth walls of the size of a hazel-nut filled with pultaceous material. Several other smaller cavities existed containing caseous matter. The left kidney was enlarged by compensatory hypertrophy and weighed seven and a half ounces.

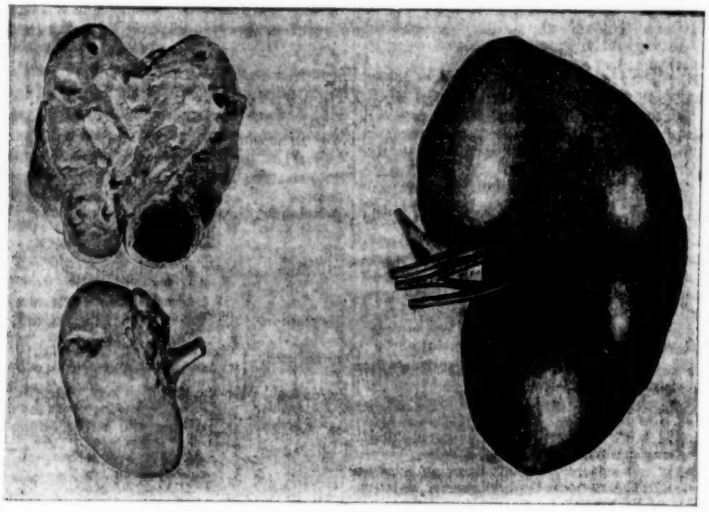
Such favourable terminations are observed not only in tuberculous lesions of the kidney but also in those of the bone and joints, the lungs, the brain, &c., where, besides undergoing the changes just indicated, less complete repair may be attained by the tuberculous products undergoing retrogressive changes, such as caseation or calcification, or by becoming encapsuled in a covering of fibrous tissue. While the latter may be looked upon as favourable terminations they cannot be regarded as complete recoveries. They demonstrate, however, that in the struggle going on between the tissues and the invading bacilli the latter have not always all their own way and in the long run may fail to hold the position which they had first established.

Tuberculosis is apparently more virulent in some parts of the urinary tract than in others—for example, the bladder, the prostate, or the epididymis are more resistant than the kidney.

The susceptibility of the different tissues of the body to given diseases varies greatly, in the same manner as some species of animals are more prone to certain infectious maladies than they are to others. Immunity may be possessed by one tissue in man while in another susceptibility may be pronounced. Some diseases affect the lower

animals—for example, swine plague—and never occur in man, while, on the other hand, other maladies attack the human subject while the lower animals enjoy immunity. In the guinea-pig even a few tubercle bacilli introduced into the body are certain to produce a localised tuberculosis almost invariably followed by a general dissemination of the disease. Dogs, on the other hand, are more highly resistant and a large number of bacilli must be used to produce any effect, and, as a rule, only when intra-peritoneal or intra-venous injections are employed. The disease remains localised and shut off the tubercle from the lymphatics and blood-vessels. In this way the tuberculous process may not extend into the pelvis, and in place of having an opportunity of being discharged may undergo fatty degeneration, caseation, and perhaps even calcification. Sometimes, however, even where caseation has taken place a cure is not effected, as the bacilli or their spores may still remain vigorous and active. So long as this is the case the process of caseation spreads and the tissues become infiltrated with inflammatory products. But as the organisms become less active fibrous

FIG. 10.



Kidney atrophied from tuberculous disease.

does not lead to a general tuberculosis. As regards susceptibility to tuberculosis certain human tissues seem to follow the course pursued in the guinea-pig while other structures offer greater resistance, analogous to that of the dog. In some structures the tuberculous process makes rapid headway, in others it remains localised for a long period, becomes quiescent, or even seems to undergo changes towards

FIG. 11.

Longitudinal section of a kidney containing a caseous mass which has become encapsuled and inert.

recovery. The circumstance that the tubercle bacilli may pass through the kidney and be found in the urine without producing any pathological effect illustrates the power possessed by the renal parenchyma in some individuals of resisting the injurious action of the organisms. When the lesion is limited to the parenchyma of one kidney and the bacilli are abundant and virulent rapid cell multiplication takes place, the virus speedily induces necrosis, which may extend beyond the tubercle into the vascular tissue around, inducing inflammatory changes which tissue develops and the whole inflammatory focus becomes encysted. Very slowly a process of shrinking and absorption takes place. In almost all cases, however, putty-like masses or caseous nodules are left in the centre of the fibrous covering.

The disease becomes quiescent so long as left undisturbed, but if injured in any way it may again become active. Tuberculous foci, even although the great bulk of the mass has become inert as a consequence of degenerative changes, almost always contain tuberculous bacilli or their spores, so that in the event of injury the imprisoned organisms may again become virulent. When a localised tuberculous centre ruptures into the pelvis of the kidney the material may become discharged by escaping externally by a process of gradual disintegration and breaking down of the tuberculous mass and evacuation of the débris; or the organ may be destroyed by suppuration and ultimately the only remnant left of the tuberculous process may be the fibrous tissue capsules.

While post-mortem examinations upon individuals who have died from other diseases provide us with illustrations of nature's methods of cure they also point out the kind of cases in which surgical intervention may be of some avail. Unilateral primary tuberculosis permits some time to elapse between the onset of the disease and the invasion to more distant parts. This period is in the great majority of cases not very long, but it is the only one in which the surgeon can interpose with advantage. A number of cases have been recorded where surgical treatment has prolonged life very considerably or where the patients have enjoyed good health for several years after the operation. The most favourable cases for operation are those in which, from the very circumstances of the case, the diagnosis is difficult and uncertain. Surgical treatment is, therefore, often not called for until the disease is advanced, or it is even postponed to a time when serious complications have set in. When, however, the physician fully appreciates the advantages of early surgical intervention and endeavours to recognise renal tuberculosis at an early stage better results will be

obtained than those hitherto achieved. The medical attendant who makes an early diagnosis in a case of renal tuberculosis renders a service to his patient as valuable as that of the surgeon who at a later date performs a successful nephrotomy or nephrectomy.

*Treatment.*—As regards treatment tuberculous disease of the kidney may be compared to scrofulous lymphatic glands. The gland becomes infected, it enlarges, and, if not contaminated by pyogenic organisms in regular course, necrosis sets in and the whole structure becomes converted into a caseous mass, enclosed by a capsule through which the disease does not extend to the parts around although it may pass along the lymphatics to the neighbouring glands. When the whole of the lymphatic tissue is destroyed the activity of the tuberculous process becomes exhausted and a putty-like mass remains. The tuberculous glands can be easily recognised at an early stage and enucleated before the capsule has ruptured and an escape of the infective matter takes place into the surrounding parts. At a correspondingly early stage tuberculous disease is not recognisable in the kidney. It is only when the tuberculous material has broken down and the débris escapes with the urine that the true nature of the malady can be ascertained. It is true that the infective material as it escapes is very liable to produce a tuberculosis of the structures with which it comes in contact. On the other hand, the discharge of the caseous matter may be complete, and in that case healing occurs just as may happen in a lymphatic gland by the formation of granulation tissue. It is well known that where rupture has taken place the healing of a lymphatic gland is much accelerated. The danger of infection is distinctly diminished by laying the gland open and by removing its contents. So also incision, scraping, and a free drainage of the tuberculous cavity in the kidney or of the distended pelvis not only removes tension and subdues pain, but is also of value in checking the local extension of the disease and by retarding general infection.

From an examination of statistics the relative value of nephrotomy and nephrectomy in the treatment of renal tuberculosis can be roughly ascertained, but there are certain points of detail that require to be carefully considered. Take first the statistics of nephrotomies and nephrectomies collected up to 1888.[1] From an examination of the tables of nephrectomy for tuberculous disease it will be observed that although the mortality is very high—namely, 36·3 per cent.—a sufficient proportion of the patients have recovered from the operation and enjoyed a prolongation of life to justify the surgeon in extending his sway where medical treatment is unavailing. The following table shows the general results:—

TABLE I.—*Nephrectomies for Tuberculous Disease.*

| | Males. | Females. | Recoveries. | Deaths. |
|---|---|---|---|---|
| Lumbar ... ... ... | 13 | 13 | 16 | 10 = 38·5% |
| Abdominal ... ... | — | 7 | 5 | 2 = 28·6% |
| Totals ... ... | 13 | 20 | 21 | 12 = 36·3% |

Of the 33 cases operated upon in 26 the lumbar operation was performed (13 males with five deaths and 13 females with five deaths), and in seven female cases the abdominal operation was adopted with two deaths. The causes of death in the 12 fatal cases were as follows:—

TABLE II.

| | Abdominal. | Lumbar. |
|---|---|---|
| Shock and collapse ... ... ... ... ... ... | 1 | 4 |
| Septicæmia ... ... ... ... ... ... ... ... | — | 1 |
| Uræmia ... ... ... ... ... ... ... ... ... | 1 | 1 |
| Hæmorrhage ... ... ... ... ... ... ... ... | — | 1 |
| Vomiting ... ... ... ... ... ... ... ... | — | 1 |
| Cause unknown ... ... ... ... ... ... ... | — | 2 |
| Totals ... ... ... ... ... ... ... ... ... | 2 | 10 |

[1] Newman: Surgical Diseases of the Kidney, 1888, pp. 309 and 340.
[2] Ibid., p. 340.

Nephrotomy has been employed in 20 cases with six deaths (three males and three females). In six instances the minor operation of incision was followed by excision, and of these two patients died and the remaining four recovered. The following table shows the general result:—

TABLE III.—*Nephrotomies for Tuberculous Disease.*

| | Males. | Females. | Recoveries. | Deaths. |
|---|---|---|---|---|
| Lumbar ... ... ... | 7 | 12 | 13 | 6 = 32% |
| Abdominal ... ... | 1 | — | 1 | — |
| Totals ... ... | 8 | 12 | 14 | 6 = 30% |

In the fatal cases the causes of death were as follows. Two patients died from amyloid disease, one from shock following the operation, one from exhaustion, another died from an increase in the symptoms of the tuberculous disease, accompanied by epileptiform attacks, and in the sixth case the immediate cause of death is not stated. F. C. Facklam[2] included the above cases in his statistics published in 1893 and gives the following conclusions:—Nephrotomies: out of 20 cases 12 patients died, giving a mortality of 60 per cent. Nephrectomies: out of 88 cases 25 patients died, giving a mortality of 28·4 per cent. In the "Annals of Surgery," vol. xxvii., 1898, p. 18, Dr. L. Bolton Bangs of New York (referring to Facklam's statistics), in a paper on the Remote Results after Operations for Renal Tuberculosis, remarks: "This percentage should have been better and would have been if the best means of diagnosis had been used. For since 1888, the date from which I have had my cases selected, the means of diagnosis have been improved and made more accurate, especially through the perfection of the cystoscope and catheterisation of the ureters. This fact, together with the fact that in 1888 Newman's work on the 'Surgical Diseases of the Kidney' was published, led me to select the last ten years as an arbitrary period in which to begin my research. It should also be stated that all of Facklam's cases have been carefully excluded. Therefore I believe that the cases which I herewith present have never before been summarised. There have been obtained from the literature 105, and through the courtesy of surgeons to whom a blank form was sent requesting details of their cases 30 cases more, making in all 135 cases. Summary:—Whole number of cases 135. Deaths, one month or less after operation: exhaustion, two cases; extension tuberculosis, two cases; uræmia (42 per cent.), 11 cases; various accidents, 12 cases; deaths, total immediate, 27. Operative mortality, 27 out of 135 = ⅕, or 20 per cent. Remote results: of 19 cases no record; of the remaining 89 cases, died two to three months, six cases; died four to nine months, seven cases—total, 13; immediate deaths, 27; number of deaths within nine months, 40. General mortality after operation, 40 out of 135 = 29·63 per cent. Survived one to eight years, 45 cases, or 33⅓ per cent. Prognosis good or improvement great in patients alive one to nine months after operation, 31. Total survivors and promising cases, 31 + 45 = 76, or 76 out of 135 = 56·3 per cent. For the details of the state of health of the 35 cases who survived at least one to two years, which are instructive and in the main encouraging, I refer you to the schedule which I submit herewith and ask attention only to those which may be termed cases of prolonged survival. Of these there were ten." Dr. Bangs remarks with reference to his statistics: "The first and undoubted conclusion which they warrant is that the immediate result of the operation for renal tuberculosis in the cases in which they are indicated are brilliant. Many cases which seem to be *in extremis* and liable to speedy death from hectic, hyperpyrexia, pain, &c., have been immediately relieved, their existence made tolerably comfortable, and their lives prolonged. But a clear and positive conclusion as to the remote results has been an exceedingly difficult one to reach. ..... Still, I think the opinion, based upon such statistics as I have been able to get, is warranted that operation affords better remote results than hygiene." In many of the cases the patients recovered from the operation and lived for a few months, but in how many instances a cure

[2] Archiv für Klinische Chirurgie, 1893, vol. xlv., p. 71.

in the proper sense of the term was effected it is more difficult to ascertain. While there is no reason to deny that in the kidney tuberculous disease may remain local and be completely removed by operation, the circumstance that the natural tendency of tuberculous disease is to attack simultaneously several organs, or one organ after another, renders the prospect of ultimate recovery less hopeful in this disease than in other suppurative lesions, notwithstanding that the immediate mortality from the incision is not much higher than in some of the non-tuberculous suppurative affections.

Nephrotomy may be practised in the first instance if the disease is limited to a small area or has formed only one cavity which can be easily drained. In such a case hope may be entertained that no further operation may be required. But should this favourable prospect not be realised and should the wound continue to discharge, then excision of the kidney must be resorted to, otherwise the prolonged suppuration may produce amyloid infiltration of organs, including the other kidney. This danger, together with the possibility of the tuberculous disease extending to other parts, may give rise to reasonable doubt as to the wisdom of leaving the tuberculous material to separate by suppuration alone.

Various methods are adopted to facilitate the discharge of tuberculous débris. It has been proposed to empty and cleanse tuberculous pyelitis by catheterisation of the pelvis of the kidney and by washing it out with aseptic solutions. I have only employed this method of treatment on one occasion and cannot recommend it. The case was one of unilateral tuberculous pyelitis in a female. A ureteral catheter was introduced, at first every second day and afterwards daily, and the pelvis was washed out with over a pint of sterilised boric solution. For six weeks the patient stood the treatment well, but although the quantity of débris in the urine was considerably diminished no distinct improvement in the symptoms occurred and subsequently a nephrotomy was performed and the tuberculous matter was scraped out with a Volkmann's spoon. The finger should be introduced through the wound at the time of the operation and the pelvis of the kidney should be freely explored, and any caseous matter should be removed either by scraping or by the application of the cautery.

Partial excision of the kidney has been recommended in the treatment of tuberculous disease, but probably is not so suitable an operation for that malady as for lesions, such as perinephric tumours and other localised growths in the cortex of the kidney which are strictly localised or only involve a small portion of the organ.

Nephrectomy should be performed as a primary operation when the disease extends over a large area and where there is little hope of success by incision and drainage, also in cases of strumous disease where nephrotomy has previously been performed but in which a sinus and discharge persist. Where there is no reasonable prospect of saving useful renal tissue or attaining comparatively rapid spontaneous evacuation nothing can be gained and much may be lost by delay; therefore, if the general health of the patient be such as to permit nephrectomy being performed it should be resorted to at the earliest possible date—indeed, whenever it has been shown that the disease is limited to one side.

In many instances the advanced condition of the tuberculous lesion prohibits all operation, but when the nature of the case is discovered early and the disease is limited to one side an incision should be made and the condition of matters explored. If the disease can be removed without excising the whole organ so much the better, but if on examination several centres are discovered, or if the disease is extensive, the kidney should be excised at once. Undoubtedly primary nephrectomy is the favourite operation and the one most likely to effect a permanent cure. Although drainage alone, or even with thoroughly scraping out the tuberculous lesions, gives relief, it is often only short-lived and the ultimate result proves unfavourable. In those cases in which operative interference is considered inadvisable the treatment must be symptomatic. The general constitutional treatment of renal phthisis belongs properly to the domain of the physician rather than to that of the surgeon, who can practically do nothing in the way of soothing local symptoms by instrumentation. On account of the great tendency of the urine to become alkaline and to decompose, washing out the bladder is in most instances contra-indicated. The internal use of boric acid, salol, or benzoate of ammonia frequently gives considerable relief to vesical irritation; the administration of antipyrin combined with extract of hyoscyamus has a similar effect. Strangury may be alleviated by the administration of preparations of opium per rectum or by the employment of warm sitz baths, and when the urine has become alkaline calomel administered by the mouth has also a very beneficial effect. Strict attention must be given to all hygienic details, to the careful regulation of diet, and if possible recourse should be had to a dry and elevated health resort.

Glasgow.

# COMPLETE OSSICULECTOMY (REMOVAL OF REMAINS OF DRUMHEAD, LARGER OSSICLES, AND EXTERNAL ATTIC WALL) IN CHRONIC OTITIS MEDIA,

## WITH ANALYSIS OF 50 CASES.

BY R. LAKE, F.R.C.S. ENG.,

SURGEON TO THE METROPOLITAN EAR AND THROAT HOSPITAL; ASSISTANT SURGEON TO THE ROYAL EAR HOSPITAL, ETC.

REMOVAL of the remains of the tympanic membrane and of the larger ossicles has been a recognised mode of treatment for chronic suppurative disease of the middle-ear for some considerable time. The results of continental surgeons have been reported and at various times papers have appeared in this country, of which one by Mr. A. Cheatle is fresh in the minds of many as a particularly useful expression of the opinions of a number of leading specialists at home and abroad. In none of the papers which have appeared of recent years is there any tabular list of cases by which one can estimate either the value of the operation or the class of cases for which it should be done or its results as regards the hearing power.

The table which accompanies this note shows some of these points. Thus it is seen to be a very successful operation, that it is entirely free from danger to health, and, finally, that the hearing is often improved and rarely, if ever, diminished. But perhaps the point of all which will be of most general interest is the probability of cure; this will be within a little of the results of the 50 cases following. It is not all cases of suppurative otitis media that yield to the operation. Unfortunately, many, and especially amongst the class from which hospital patients are drawn, require the radical operation, foremost amongst these being those accompanied by cholesteatomata of the attic and cases of destruction of the wall of the meatus in the posterior surface. In these cases the surgeon should, in my opinion, perform the operation, following it up later with the larger should it prove insufficient. I cannot go so far as some of our continental *confrères* who use it even in cases which threaten graver mischief.

The indications for the operation appear to me to be divisible into two main subdivisions—those for the cure of chronic suppurative otitis and those for the improvement of hearing after the cessation of discharge. It is difficult, and indeed impossible, to place any time-limit as to how long chronic otitis media suppurativa will remain harmless even when unaccompanied by any other symptoms. As a general guide one may say that this duration is directly affected by the effects of treatment and by the situation of the perforation. An uncomplicated otorrhœa which has resisted all forms of treatment for six months is certainly a case for ossiculectomy. This becomes more imperative when the perforation is situated in the attic or upper posterior segment of the drumhead. A perforation in either of these situations is more surely indicative of a lesion in some part of the ossicular chain; for instance, pus pouring down over the long arm of the incus and head of the stapes first destroys the joint and then the bones to a variable extent. Again, these perforations, if they heal, as they often do under appropriate treatment, are usually accompanied by a marked diminution in the hearing power if the suppuration is of long duration, which loss can often be remedied to a large extent by a careful operation. A very useful practical test has been formulated by Mr. A. Cheatle—viz., if in any case it is desirable to ascertain the continuity or discontinuity of the

ossicular chain the membrana tympani is gently stroked with a Hartmann's probe; in the first instance this is *heard and felt*, in the second it is *felt* only. When the attic is the seat of cholesteatomatous degeneration it is especially imperative to do more than simply remove the ossicles; the outer attic wall must also be removed. This removal of the outer attic wall is now becoming considered as an integral part of the operation, though in the cases quoted it was not done, as I was only led to adopt it later from its good results in the hands of others, but I now consider it of such importance that I do it in all cases.

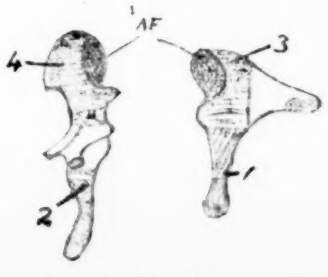
*The condition of the ossicles.*—In none of my cases in which the operation in question has been performed for chronic suppurative disease have the ossicles been intact. Either the head of the malleus, its long process, or some part of the incus has been destroyed. Of the latter bone the short process longest resists the corroding action of the pus, though frequently the whole incus is destroyed, and often the head and crura of the stapes also. More rarely the incus and malleus are firmly ankylosed, or the much thickened capsular ligament holds together two useless remnants. From this one sees that the chain is never intact in old-standing cases. The tympanic membrane is thus cut off from all communication and connexion with the labyrinth and can no longer perform its functions; in fact, it often becomes both an impediment to the inward passage of sound and the outward flow of pus. This is an additional argument for operative interference of some kind.

FIG. 1.

Author's attic (or incus) curette.

The indications for the operation have already been alluded to. They are briefly as follows. 1. Intractable disease of the attic with a perforation in Shrapnell's membrane, especially if accompanied by definite caries or deafness. 2. Intractable disease with perforation in the posterior superior quadrant. 3. Intractable disease with considerable destruction of the membrane in any other situation. 4. Residual deafness after suppuration without nerve deafness. Any more serious condition becomes a case for the radical operation, but in the foregoing there is, in my opinion, justification for attempting to avoid more serious measures. The operation itself is so well known and so clearly described in text-books that all I can do here is to emphasise the necessity of removing the anterior attic wall. This may be done with any of the cutting forceps as Krause's, or by means of Cheatle's burr, which enables a more radical operation to be done. The use of my crotchet-shaped curettes, which were first recommended by me in 1896 as a means of removing the incus and clearing out from the attic granulation tissue and detritus, has much simplified the hitherto difficult task of removal of the incus. By its use the smallest particle of a necrotic incus can be removed with certainty from the iter ad antrum. The instrument in question, of which an illustration is given, is introduced into the attic after removing the malleus; it thus occupies the place vacated by the head of that bone. The handle is then rotated forwards and grips the incus or what remains of it, and by a forward and downward motion the bone is either dislocated into the tympanum or brought out in the loop of the instrument. As a last

FIG. 2.




Ossicles showing parts destroyed by suppuration. A F, Articular facets. The shaded parts were destroyed in the order indicated by the numbers 1, 2, 3, 4.

*Table showing Results of 50 cases of Complete Ossiculectomy.*

| No. | Sex. | Age in years. | Duration of disease in years. | Side. | Result. | |
|---|---|---|---|---|---|---|
| | | | | | Hearing. | Discharge. |
| 1 | F. | 24 | 20 | Left. | Improved. | Cured. |
| 2 | ,, | 22 | 18 | Right. | Much improved. | ,, |
| 3 | ,, | 20 | 18 | ,, | — | ,, |
| 4 | M. | 29 | 21 | Left. | Improved. | ,, |
| 5 | F. | 34 | 21 | Right. | ,, | ,, |
| 6 | ,, | 25 | 1 | Left. | — | ,, |
| 7 | ,, | 23 | 17 | ,, | — | ,, |
| 8 | M. | 46 | 25 | Right. | — | ,, |
| 9 | F. | 25 | 23 | ,, | — | ,, |
| 10 | ,, | 29 | 6 | Left. | — | ,, |
| 11 | M. | 17 | 10 | ,, | Improved. | Not cured. |
| 12 | F. | 19 | 6 | Right. | ,, | Cured. |
| 13 | M. | 16 | 12 | Left. | Very much improved. | ,, |
| 14 | ,, | 11 | 7 | Right. | ,, | ,, |
| 15 | F. | 15 | 12 | Left. | Much improved. | ,, |
| 16 | ,, | 15 | 1 | Right. | — | ,, |
| 17 | ,, | 15 | 13 | ,, | — | ,, |
| 18 | M. | 21 | 16 | ,, | Much improved. | ,, |
| 19 | ,, | 21 | 16 | Left. | ,, | ,, |
| 20 | ,, | 25 | 5 | ,, | Very much improved. | ,, |
| 21 | F. | 22 | 11 | Right. | — | ,, |
| 22 | ,, | 20 | 1½ | ,, | — | Not cured. |
| 23 | M. | 29 | 24 | Left. | — | Cured. |
| 24 | ,, | 10 | 9 | Right. | — | ,, |
| 25 | ,, | 10 | 9 | Left. | — | ,, |
| 26 | F. | 28 | 8 | ,, | — | ,, |
| 27 | ,, | 54 | 26 | Right. | — | ,, |
| 28 | ,, | 21 | 10 | ,, | — | ,, |
| 29 | M. | 36 | 30 | Left. | — | ,, |
| 30 | F. | 35 | 21 | Right. | Improved. | Not cured. |
| 31 | M. | 21 | 6 | Left. | — | ,, |
| 32 | ,, | 25 | 12 | ,, | Improved. | ,, |
| 33 | ,, | 13 | 10 | Right. | — | Cured. |
| 34 | ,, | 16 | 15 | ,, | Improved. | ,, |
| 35 | F. | 18 | 10 | Left. | ,, | ,, |
| 36 | M. | 26 | 20 | ,, | — | Not cured. |
| 37 | ,, | 18 | 15 | Right. | — | ,, |
| 38 | F. | 29 | 8 | ,, | — | Cured. |
| 39 | M. | 26 | 20 | ,, | — | ,, |
| 40 | ,, | 26 | ¼ | ,, | — | ,, |
| 41 | F. | 22 | 18 | ,, | — | ,, |
| 42 | M. | 33 | 25 | ,, | — | ,, |
| 43 | ,, | 24 | 22 | ,, | — | ,, |
| 44 | ,, | 24 | 22 | Left. | — | Not cured. |
| 45 | F. | 19 | 10 | Right. | — | Cured. |
| 46 | ,, | 22 | 2 | ,, | — | ,, |
| 47 | ,, | 16 | 14 | Left. | Improved. | ,, |
| 48 | ,, | 16 | 9 | Right. | ,, | ,, |
| 49 | M. | 27 | 3 | Left. | — | ,, |
| 50 | F. | 25 | 4 | Right. | Improved. | ,, |

REMARKS.

CASE 1.—Vertigo occurred on syringing before the operation.
CASE 5.—There was vertigo for two weeks after the operation.
CASE 6.—Hæmorrhage occurred before the operation.
CASE 12.—Vertigo was present for three weeks after the operation.
CASE 13.—The stapes, with the exception of the footplate, was also removed.
CASE 17.—Recurred and again discharge ceased.
CASE 26.—Recurrence took place and again ceased.
CASE 35.—There was vertigo one week after the operation.
CASE 40.—The hearing was fair. Facial palsy was present before the operation, but recovery occurred later.
CASE 44.—There was cholesteatoma of the attic.
CASE 47.—Vertigo was present for ten days after the operation.

precaution the cavum is thoroughly cleansed with Lister's strong solution, a precaution which contributes materially to the ultimate success of the operation. Transient vertigo occurs in a small proportion of cases, but septic absorption has never been reported.

These 50 cases are almost equally divided amongst the sexes, but nothing can be deduced from that fact, as the proportion of otorrhœas in the sexes is fairly equal. As to cure, no less than 42 were cured, although three had temporary relapses and in several of the remaining eight the patients disappeared before a cure was effected and some may now be well if all are not. Improvement was noted in the hearing power in 21 cases. In three cases hearing returned to normal, in four cases it was very much improved, and in the remaining 14 the improvement was sufficient to be appreciated by the patients and their friends and was demonstrated as well by careful tests. The right ear was the seat of disease in 29 cases and the left in 21 cases. The average age of the patient was 22·4 years and the average duration of the disease was 13 years. From this table can be derived information on all points save as to the time that should be allowed to pass before taking some radical step to check the disease, and the surgeon must rely upon his own judgment in this matter rather than upon any written rule.

Harley-street, W.

## A CASE OF
# GUNSHOT WOUND OF THE ABDOMEN WITH INJURY TO THE INTESTINE;
### RECOVERY WITHOUT OPERATION.

BY C. REISSMANN, M.A., M.B. CANTAB., B.SC. LOND.,
CIVIL SURGEON AT NO. 1 GENERAL MILITARY HOSPITAL, WYNBERG, CAPE TOWN.

THE patient, a well-built man, aged 31 years, was shot by a Mauser bullet in the engagement at Elandslaagte on Oct. 21st, 1899. The shot was fired from a distance of about 200 yards. The patient at the time was advancing in the direction of the enemy at a "double" when he felt a burning sensation in the right hypochondriac region which a minute later grew into a severe griping pain. Becoming immediately faint, though without loss of consciousness, he fell and at once vomited about half a pint of nearly pure blood. The pain, which became still more severe, was confined to a small roughly circular area three inches in diameter with its centre over the inner extremity of the ninth right rib in front. The patient lay on the ground for about 20 minutes, during which time there was considerable hæmorrhage from the wounds. He was then dressed by a comrade, the dressing consisting of a puttee unwound from the patient's leg and which had been worn for several days and through heavy marching. This rude dressing was placed in immediate contact with the wounds and was wound several times round the body, nor was it disturbed for four days. After this first dressing the patient lay on the field for five or six hours and was then carried sitting in a chair to a farmhouse where he remained in a sitting posture for two days, when he was removed by train to the field hospital at Ladysmith. Here on Oct. 25th the first dressing, which was soaked through with blood (now dry), was replaced by one of cyanide gauze. The patient remained at Ladysmith for eight days, during which time he was kept on liquid diet; he was then removed to Pietermaritzburg where the wounds were dressed for the third time. From Pietermaritzburg, after a week, he was removed here. Ten days after the injury he was given solid food (meat and vegetables). There was never any universal abdominal pain nor was there any distension of the abdomen. The patient did not micturate for 18 hours after the injury and he stated that his urine then was dark in colour; it was not ascertained whether it contained blood. The bowels were not opened for two days and the patient stated that the motions contained much blood. He had not taken medicine.

On Nov. 17th the patient was up and about and in his usual health. Over the inner end of the ninth rib on the right side in front and half an inch outside the nipple line was a regular-shaped oval scar with a long diameter for one-third of an inch, indicating the point of entrance of the bullet. There was a similar scar, identical in size and shape, situated half an inch above the right iliac crest behind and four inches to the right of the vertebral spine. The wounds had healed without suppuration and there was no thickening about them. The abdominal respiratory movements were free. The liver dulness, which commenced at the sixth rib, extended to the costal margin, and the edge of the liver could just be felt below the ribs on deep inspiration. The entrance wound above described was half an inch above the lower limit of the liver dulness. There was no abdominal tenderness or induration and no dulness in the flanks.

There can be no doubt that the bullet penetrated the peritoneal cavity, possibly perforating the liver and, I think, certainly penetrating some part of the alimentary canal, either the pyloric end of the stomach or the ascending colon. It is impossible to join the points of entrance and exit of the bullet by a right line which does not also pass through the peritoneal cavity. In itself, of course, this affords no proof that the bullet must have penetrated the peritoneum, since it is well known that by impact with a bone bullets sometimes deviate considerably from their course and occasionally even pass a considerable distance round the body beneath the skin before again emerging. In such cases also a hard cord can often be felt following the track of the bullet beneath the skin from its point of entrance to that of its exit. No such hard cord was present in this case 18 days after the injury when he was first seen by me. But the fact that the injury was immediately followed by hæmatemesis and shortly also by melæna is sufficient to prove that the intestine was injured and in all probability perforated. I do not think that the kidney was injured, and the dark colour of the urine which has been referred to was probably due to concentration and not to admixture of blood (the patient was suffering from shock at the time).

The case is of importance from the point of view of treatment, for we are taught that cases of gunshot wounds of the intestine should be submitted to immediate laparotomy without waiting for symptoms to develop. That is to say, in war time such cases would require to be operated upon at the field hospital, which is stationed near the fighting line and moves with it, and where the conditions for performing so serious an operation as a laparotomy for intestinal suture are by no means good.

Here, then, we have a case where the risks of peritonitis would seem to have been of the greatest, for the peritoneal cavity was in direct continuity both with the exterior of the body by a wound covered with a dressing hardly likely to be sterile or antiseptic and also with the interior of the gut, and yet peritonitis did not supervene and the patient made an uninterrupted recovery.

From observations made upon a single case one would not, of course, propose to draw general conclusions. Nevertheless the statement that all perforated wounds of the intestine must be dealt with by an immediate laparotomy would appear to be somewhat too rigid and to require modifying.

Wynberg.

**CARDIFF SEAMEN'S HOSPITAL.**—The net proceeds of the bazaar recently held in aid of this institution were £4276.

**CORNGREAVES HALL RETREAT.**—This retreat for inebriate women of any religious denomination voluntarily submitting themselves to the treatment and regulations of the institution is in Staffordshire, between Halesowen and Old Hill. The nearest railway station is Old Hill on the Great Western Railway, distant a mile and a half. Cradley and Halesowen stations are also convenient. The retreat is managed by a committee of ten ladies and nine gentlemen, all of whom are members of the Worcester Diocesan Church of England Temperance Society. Applications for admission may be made to the lady superintendent, Corngreaves Hall, Cradley Heath, or to the secretary of the Worcester Diocesan Church of England Temperance Society, Temperance Institute, Corporation-street, Birmingham, or to the honorary secretary of the Retreat, Mr. J. H. Broscomb, 571, Moseley-road, Birmingham. No person will be admitted for less than 12 months except under special resolution of the committee, and patients are strongly advised to enter for two years. Patients under special circumstances may have their children under the age of 12 months with them. The terms are £1 1*s.*, or 10*s.* 6*d.*, or 5*s.* per week according to class of patient. The age limit is from 20 to 45 years.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

## KENSINGTON INFIRMARY.

### A CASE OF TRAUMATIC TETANUS WITH RECOVERY.

(Under the care of Dr. H. P. POTTER.)

WE have published within the last year in THE LANCET[1] many cases of tetanus, in some of which the antitoxin has been employed while in others the treatment has mainly consisted in giving sedatives. When the results are examined it must be acknowledged by any unbiased critic that the antitoxin treatment has not fulfilled the expectations to which its first successes gave rise. When injected subcutaneously it seems to benefit those cases only which are not very acute or very severe and even when injected under the dura mater or intra-cerebrally it does not appear to be much more efficacious. In a paper on the intra-cerebral injection of the antitoxin[2] 13 cases are collected, and of these six recovered; but even with this method an early diagnosis is of the greatest importance in order that the treatment may be commenced before the nerve centres have been much involved. The efficacy of tetanus antitoxin is readily demonstrable *in vitro*, and in the body also the antitoxin can destroy the toxin if it can meet the toxin before the latter has reached the nerve cells with which it enters into a firm union. The intra-cerebral injection is also not without obvious risks of its own, and one case has been recorded[3] in which death occurred from two abscesses in the brain eight weeks after the last intra-cerebral injection. The plan of treatment by sedatives, though of distinct value in mild cases, appears to be of little use in severe attacks, yet in some cases, as in that recorded below, it is efficacious. Krokiewics has published[4] three successful cases of the treatment of tetanus by the injection of brain emulsion, but the cases are too few to justify the expression of any definite opinion in its favour. A treatment which deserves to be more extensively tried is that introduced by Baccelli. This consists in the subcutaneous injection of a 2 per cent. solution of carbolic acid. The total quantity of phenol injected must be large, even as much in some cases as 35 centigrammes per diem. As Ascoli[5] points out, this method of treatment must be accompanied by thorough local disinfection, attention being also paid to the support of the patient's strength. Ascoli has collected 33 cases of this treatment and of these only one patient died, and in that case no more than 23 centigrammes of phenol were injected in the three days during which the treatment lasted. In no instance were any signs of poisoning produced. This method certainly deserves a more thorough trial than it has hitherto had in this country. The mortality from tetanus is very high and seems to depend chiefly on the length of the incubation period. The following figures have been given:[6] in cases in which the incubation period was less than eight days the mortality was 91 per cent.; when between eight and 14 days the death-rate was 80 per cent., but when longer than a fortnight the mortality was only 52 per cent.

A man, aged 45 years, was admitted into the Kensington Infirmary on Dec. 29th, 1899, for stiffness in movement of the lower jaw of four days' duration. He stated that he had been drinking heavily and walking about the country with badly fitting boots. 14 days before admission a nail had pricked his heel causing a sore. When admitted the first thing which attracted attention was well-marked risus sardonicus with fixation of the lower jaw, which could be forced open to the extent of half an inch. The muscles of the neck and back were firmly contracted, and such was the stiffness of the limbs that the patient could do nothing for himself with the arms nor could he stand upright. There were occasional spasms of the face and trunk with profuse sweating and much distress. An excoriated blister of the size of a shilling with an inflamed area around was present on the heel; there was also slight excoriation of the arm and knee; to these carbolic dressings (1 in 40) were applied. During the evening he had three spasmodic attacks, in which the angles of the mouth were retracted and the alæ nasi were dilated. The patient was removed to a quiet, darkened room and every four hours was given 15 grains each of chloral and potassium bromide, which he swallowed with a sudden gulp. On the following day, in consequence of three severe paroxysms, the chloral and bromide were increased to 30-grain doses every four hours. From this time there were no spasms, although the dysphagia continued; but in spite of this the nurse induced the patient to take a fair quantity of milk. Constipation, which was continuous throughout the illness, was relieved with calomel and enemata; the temperature and urine were normal. An attack of delirium tremens ensued on the 31st and lasted for four days. During this complication the pulse on one occasion became almost imperceptible and the countenance was alarmingly livid. The medicine was discontinued on Jan. 4th, 1900, but it was necessary to repeat it two days later for a relapse in the fixation of the jaw. From this date the patient made an uninterrupted recovery and suffered only from loss of coördination in the lower limbs with exaggerated patellar reflex.

*Remarks by* Dr. POTTER.—The report of a case of tetanus under the care of Dr. W. Dyson[7] interested me exceedingly, as the above case has lately been treated for the same disease with similar drugs and a successful result. I may also mention that a case of acute tetanus following a small puncture of the foot by a nail in the boot was treated in this infirmary in 1897. The man died and at the inquest the somewhat paradoxical but true verdict was returned, "Asphyxia following injury from a nail."

## SOUTH DEVON AND EAST CORNWALL HOSPITAL.

### A CASE OF INTESTINAL OBSTRUCTION DUE TO THROMBOSIS OF SOME OF THE MESENTERIC VESSELS; LAPAROTOMY; DEATH; NECROPSY.

(Under the care of Mr. C. WHIPPLE.)

MR. TREVES in his work on "Intestinal Obstruction" (p. 447) points out that thrombosis of the mesenteric arteries produces symptoms which are, as a rule, more acute than those manifested when the corresponding veins are involved. Recovery in acute cases is only probable if an early laparotomy be performed.

A man, aged 48 years, was admitted into the South Devon and East Cornwall Hospital on Oct. 22nd, 1899. He had been in the hospital 12 months previously under the care of Dr. Lawrence Fox with symptoms of Bright's disease and delirium, when he was found to have albuminuria and retinitis. The present illness began on Oct. 19th, when he had pain in the abdomen and nausea, but he went about his work as usual. On the 20th the pain and nausea continued and on the 21st these symptoms became worse and he passed no urine. On the morning of the 22nd he called in Dr. C. J. Cooke, who passed a catheter but found no urine in the bladder, and as the man's condition was bad and his abdomen was distended and painful he sent him to the hospital.

On admission the patient was found to be a stoutly-built man of bloated aspect. He was suffering from nausea and vomiting of greenish fluid and from constipation since Oct. 20th. The abdomen was moderately distended and dull from the presence of fluid in both flanks, and it presented an indefinite fulness and tenderness in the hypogastric region. Under the influence of gin he passed

[1] THE LANCET, 1899, April 22nd, p. 1091; April 29th, p. 1156; May 13th p. 1290 and p. 1291; July 9th, p. 89; August 27th, p. 553; and Oct. 14th, p. 1012.
[2] University Medical Magazine of Philadelphia, February, 1899.
[3] Brit. Med. Jour., July 1st, 1899, p. 9.
[4] Wiener Klinische Wochenschrift, 1899 No. 28.
[5] Bull. dell. R. Accad. Med. di Roma, 1897-98, part iv.
[6] Berliner Klinische Wochenschrift, 1899, No. 29.
[7] THE LANCET, Feb. 24th, 1900, p. 531.

eight ounces of urine in the evening and seemed to be somewhat better. On the 23rd he passed more urine, but was still suffering from nausea and vomiting of greenish fluid. Compound powder of jalap was given in the morning, and later in the day an enema containing castor oil was administered, but with no result. At 2 A.M. on the 24th Dr. H. W. Webber, who was called by the house surgeon to see the patient as his condition was rapidly becoming worse, found him to be dusky in colour, with a feeble intermittent pulse of 140 to the minute and with a distended abdomen; he continued to vomit.

Ether being cautiously administered a two-inch incision was made in the middle line below the umbilicus. On opening the peritoneal cavity some chocolate-coloured fluid escaped and the presenting small intestine was seen to be deeply congested and distended. Two fingers inserted into the wound felt distended bowel everywhere and towards the pelvis an indefinite nodulated mass. The patient's condition being extremely bad, one of the distended coils of bowel was brought up to the wound and fixed there by a horseshoe shaped flat metal rod (designed for this purpose by Mr. Hamilton Whiteford) and the bowel was incised, when gas and a little fæcal matter escaped. A large rubber drainage-tube was fixed in the enterotomy wound, dressings were applied, and the patient was removed to his bed in a moribund condition. The operation only lasted a little over 15 minutes. On recovering from the anæsthetic he became violently delirious and could with difficulty be kept in bed; he then sank rapidly and died at 5 A.M.

*Necropsy.*—At the post-mortem examination, which was held on the same day, it was found that a portion of the ileum, 38 inches in length, was deeply congested and in places pulpy and becoming gangrenous. Two sections, each of about four inches long, were adherent along this length. The bowel wall was thickened and nodulated with blood-vessels distended with firm clot. The portion of mesentery corresponding to the affected bowel showed many vessels filled with firm dark blood-clot. Very little fæcal matter was contained in the bowel. The thoracic organs were not examined.

*Remarks by* Dr. WEBBER.—The specimen was shown at a meeting of the Plymouth Medical Society and in the discussion as to treatment in these cases the opinions were expressed: (1) that if the portion of bowel and mesentery involved is not extensive and the patient's condition is good the affected area should be excised and junction should be effected by immediate suturing or with the aid of some mechanical support such as Murphy's button; and (2) that if the amount of bowel and mesentery involved is extensive or the general condition of the patient is serious the affected area should be brought up to the abdominal wall and fixed in the wound, and the healthy bowel immediately above should be opened and drained until such time as a secondary resection of the diseased area becomes feasible. For permission to publish the notes of the above case I am indebted to Mr. Connell Whipple, senior surgeon.

# Medical Societies.

## PATHOLOGICAL SOCIETY OF LONDON.

*The Results obtained by Injecting β-amido-butyric Acid into Animals.—Observations on the Excretion of Nitrogen in Rheumatoid Arthritis.—Experiments on the Rootlets of the Ninth, Tenth, and Eleventh Cranial Nerves in Cats and Dogs.—Demonstrations of Various Experiments.*

A MEETING of this society was held on March 6th at the Laboratories of the Royal Colleges of Physicians of London and Surgeons of England, Victoria-embankment, Mr. PEARCE GOULD, the Vice-President, being in the chair.

Dr. KARL GRUBE of Neuenahr communicated the Results on Animals which he had obtained by Injecting β-amido-butyric Acid, the experiments being undertaken to obtain some information on the causes that produced diabetic coma. He first discussed the various theories that had been brought forward to explain the occurrence and symptoms of diabetic coma, and then directed attention to a paper by W. Sternberg which was published a short time ago in the *Zeitschrift für Klinische Medicin*, in which on theoretical grounds as well as on experimental evidence β-amido-butyric acid had been shown to be the probable cause of diabetic coma. By modifying the experiments of Sternberg Dr. Grube succeeded in producing in cats a condition very like the typical diabetic coma. He not only got deep narcosis but also an alteration in the respiration analogous to that found in diabetic subjects and which had given the typical diabetic coma the name of "dyspnœic coma." He also succeeded eight times out of nine in demonstrating the appearance of diacetic acid in the urine, and in four experiments acetone could also be demonstrated. According to his experiments he was therefore able to produce by injecting β-amido-butyric acid (1) coma; (2) a respiration very similar to that appearing in diabetic coma; and (3) to show the presence in the urine of some of those substances that are found in the urine of comatose diabetic patients. Dr. Grube therefore concluded from his experiments that β-amido-butyric acid might possibly be one of the substances, if not the substance, that produced diabetic coma.

Dr. W. BAIN described a typical case of Rheumatoid Arthritis occurring in a young man in which he made a quantitative examination of the urine for seven consecutive days, the patient being on a fixed diet. The average daily amounts of the constituents estimated were as follows: urea, 18·856 grammes; uric acid, 0·266 gramme; phosphorus pentoxide, 0·986 gramme; alloxur bases, 0·033 gramme; and ammonia, 0·397 gramme. Lactic acid was not detected. It would be observed that there was a diminution in the excretion of uric acid and phosphates.

Mr. A. W. CADMAN described Experiments on the Rootlets of the Ninth, Tenth, and Eleventh Cranial Nerves in Cats and Dogs, the general arrangement of the rootlets in these animals being in three main bundles—viz., (1) an upper bundle consisting of two large rootlets—the so-called "glosso-pharyngeal"; (2) a middle bundle consisting of four or five smaller rootlets—the vagal; and (3) a lower bundle consisting of two well-marked rootlets—the accessory, these bundles, however, being often further subdivided into smaller strands. Two series of experiments were described. The first series was carried out by direct electrical and mechanical stimulation of the divided rootlets in animals which had been bled and the bone then rapidly removed. These experiments were on the palate, pharynx, and œsophagus, the fibres to the œsophagus and levator palati being found in the upper bundle, and those to the constrictors of the pharynx in the upper bundle, and the upper rootlets of the middle bundle. The second series of experiments was carried out by reflex excitation of the central cut end of the right vagus, after division of the left rootlets, in living animals whose carotids had been ligatured. These experiments were on (1) cardiac inhibitory fibres which were shown to be in the lower rootlet of the lower bundle; and (2) respiratory (Hering Breuer) fibres which were found in the lower rootlet of the upper bundle.

Dr. T. G. BRODIE and Dr. W. E. DIXON performed an experiment demonstrating the Action of Certain Drugs on the Pulmonary Circulation and the Bronchial Muscles. The injection of suprarenal extract gave rise to an increase of blood-pressure and to congestion of the lung. The injection of muscarine caused a spasmodic condition of the bronchial muscles and the demonstrators stated that pilocarpin had the same effect. On the other hand, it was found that atropine counteracted the effect thus produced, and they had also found that urethan had the same antagonistic action to muscarine and suggested that this latter drug might be of service in cases of asthma.

Dr. PAVY, Dr. BRODIE, and Mr. T. G. SIAN demonstrated the Effect of Phlorizin in Producing Glycosuria in an Artificially Perfused Kidney. It had previously been shown that the injection of phlorizin into the renal artery of one kidney gave rise to an increased flow of urine from that kidney and to the presence of sugar and that the other kidney was only affected later when the drug passed into the general circulation. The experiment performed showed that in an extirpated kidney in which the circulation was maintained the injection of phlorizin gave rise to the presence of sugar in the urine excreted. The sugar was produced from a proteid molecule and the effect of the drug was to allow it to pass through the epithelium of the kidney.

Dr. PAVY then demonstrated the Production of Glycosuria by Exalted Respiration. He said that he had shown this

some years ago, but he had not then the convenient apparatus for maintaining exalted respiration that he now had. In an animal in which exalted respiration had been kept up for some time he demonstrated the presence of sugar in the urine and showed at the same time, by the red colour of the liver, spleen, and vessels of the intestine, that the blood was in a supra-oxygenated condition.

Dr. BRODIE demonstrated the action of Diphtheria Toxin on the Spleen. He said that he had previously shown that the diphtheria toxin produced paralysis of unstriped muscle. With the spleen in an oncometer he showed that the first effect of injecting five cubic centimetres of a weak diphtheria toxin was a constriction of the vessels of the spleen. This was rapidly followed by a relaxation, then by an alternate relaxation and contraction, and, lastly, there was complete paralysis of the spleen, and the further injection of toxin produced no constricting effect.

## LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

*Urotropine as a Urinary Antiseptic.—Intestinal Obstruction.—Contracted Pelvis.—Exhibition of Cases and Specimens.*

A MEETING of this society was held on March 2nd, Dr. GORDON BLACK, the Vice-President, being in the chair.

In the absence of the President Dr. BLACK alluded to the loss sustained by the death of Mr. Thomas Scattergood, dean of the medical school and a past President of the society.—A vote of condolence with his family was passed.

Mr. P. J. CAMMIDGE described in detail a number of bacteriological and chemical experiments which he had carried out in his investigations on the manner of the Excretion of Urotropine in the Urine and the Cause of the Antiseptic Properties possessed by the Urine of the Patients taking the Drug. Mr. Cammidge pointed out the very marked inhibitory power which it showed over the growth of the typhoid bacillus and urged that urotropine should be used in all cases of enteric fever to prevent dissemination of the bacilli by the urine and to avoid the cystitis, &c., liable to complicate the disease.—Dr. GORDON BLACK, Dr. T. CHURTON, and Dr. E. F. TREVELYAN took part in the discussion which followed and Mr. CAMMIDGE replied.

Dr. BASIL HALL (Bradford) read the reports of two cases of Intestinal Obstruction caused by Meckel's Diverticulum. The first case occurred in a boy, aged 15 years, and was quoted as a typical instance of strangulation by a band, the onset and symptoms being of an acute character. The abdomen was opened in the right iliac region and the diverticulum was removed, the patient making an uneventful recovery. The second case was that of a boy, aged three years, and was peculiar on account of its very gradual onset. For a period of four days the child suffered from constipation and occasional vomiting, but continued to play about the house. On the fourth day some abdominal distension appeared, the child passed very rapidly into a state of collapse, with greatly increased distension and signs of peritonitis. The abdomen was opened in the middle line and a Meckel's band was found constricting a loop of ileum. The loop was in a condition of volvulus, evidently of recent formation, thus accounting for the onset of acute symptoms on the fourth day. In both cases the diverticulum was attached to the root of the mesentery near its termination.—Dr. T. W. GRIFFITH and Mr. B. G. A. MOYNIHAN discussed the paper and Dr. BASIL HALL replied.

Dr. J. B. HELLIER described a case of Kyphotic Pelvis in which the transverse diameter of the pelvic outlet was reduced to 1¾ inches. The patient was 4 feet 8 inches in stature and had lumbo sacral kyphosis due to injury in infancy. She was admitted into the Leeds Infirmary on Christmas Day after having been 24 hours in labour. The uterus was in a state of tonic spasm and the head was impacted against the ischial spines. She was delivered by craniotomy. Dr. Hellier showed drawings and photographs of the case and described the relation between angular curvature and pelvic deformity.

The following cases, specimens, &c., were exhibited:—

Mr. T. R. JESSOP: A case of Aneurysm in the Neck treated by Ligation of the Common Carotid. The patient was shown.

Dr. E. O. CROFT: Uterus removed for early Columnar Carcinoma commencing at the Internal Os, with Microscope Specimens.

Dr. E. WARD: (1) Malignant Disease of the Rectum; (2) Biliary Calculi removed from the Common Duct; and (3) Leucocythæmic Spleen.

Dr. T. CHURTON and Mr. H. LITTLEWOOD: A case of Lumbar and Subphrenic Abscess bursting through the Lung. Operation was performed with recovery.

Mr. P. J. CAMMIDGE: (1) Growth of the Œsophagus (Dr. Chadwick's specimen); (2) Section of Tuberculous Intestine showing Bacilli; and (3) Fibrinous Pericarditis.

Mr. H. LITTLEWOOD: (1) Three-quarters of a Stomach removed for Diffuse Malignant Growth (Columnar Epithelioma) involving the Great Curvature, together with some Enlarged Glands. The ends of the stomach and duodenum were closed and the jejunum was attached to the stomach by means of a Murphy's button. The patient was a man, aged 53 years. He suffered very little from shock after the operation. He did well for three days. He died on the seventh day from peritonitis. The part of the stomach near the button was soft and sloughy and here the contents had leaked into the peritoneum. (2) The Bladder and Kidneys from a case of Enlarged Prostate.

Dr. E. F. TREVELYAN: (1) A specimen of Atheromatous Endocarditis of the Aortic Valves. Two of the cusps showed firm cohesion with a calcareous mass in the line of union. There were early adhesions between one of these cusps and the remaining cusp. (2) Punctiform Hæmorrhages with Erosions in the Mucous Membrane of the Stomach. Both these specimens were taken from the body of a diabetic patient, aged 56 years.

Dr. T. CHURTON: (1) A case of Biliary Cirrhosis in a girl aged eight years; and (2) a case of Gonorrhœal Rheumatism of the Ankle-joint.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

*Pathological Ovary.—Clinical Report of the Rotunda Lying-in Hospital.*

A MEETING of this section was held on Feb. 9th, Dr. A. V. MACAN, the President, being in the chair.

Dr. ALFRED SMITH showed an interesting Pathological Ovary which he had removed from a patient, aged 25 years, who enjoyed good health up to Christmas, 1899, when her abdomen commenced to become distended. She rapidly emaciated, was extremely weak, and on admission into hospital no diagnosis could be made, the distension from the free ascites was so great. On exploration the omentum was found to be quite solid, mobile, confined to the upper abdomen, and in appearance like boiled sago grains; it bled easily. The left ovary was normal. The right ovary was of normal size and consistency; it showed in the fresh state numerous small whitish warty elevations in appearance not unlike grains of boiled sago, identical in appearance with the omentum. Microscopic examination showed that these growths consisted of a delicate stroma, containing in its meshes, in a somewhat alveolar arrangement, groups of large globular degenerate-looking cells. The nucleus was eccentric and flattened against the cell margin; in many cases it was broken up and absent, whilst the protoplasm, containing many oil droplets, yielded the typical fatty and mucoid reactions. In parts the growth seemed to be converted into true fat. It sprang altogether from the surface of the ovary and did not infiltrate the subjacent tissues. The section of omentum gave the same characteristics. The fluid in the abdomen was light brown or straw-coloured; it contained no blood and poured out quite easily.

Dr. R. D. PUREFOY read some cases from his Clinical Report of the Rotunda Lying-in Hospital for 1898-1899.—Dr. A. SMITH criticised the absence of the date of entry into and departure from hospital of patients. He pointed out that a new expression ("mixed hæmorrhage") had been introduced as a form of accidental hæmorrhage and he considered the use of this term a mistake, as it was quite unnecessary. It was curious that several of these accidental hæmorrhages occurred rather early in pregnancy. He pointed out cases occurring in the eighth, seventh, and sixth months, and he thought it was not proved satisfactorily that these were really cases of accidental hæmorrhage. There was a case of locking of twins recorded but on reading the account he could not agree that they were

looked at all in the ordinary sense. On page 12 of the report the serre-nœud was stated to have been employed in a Porro's operation. He himself would not think of using a serre-nœud at all, and he did not see why they should go back to the old Porro's operation when they had modern methods of doing it. He congratulated Dr. Purefoy on the mortality, which was very low. The hospital still maintained its high position among similar institutions.—Dr. W. J. SMYLY agreed with Dr. Smith in deprecating the use of the expression "mixed accidental hæmorrhage." When he was master of the Rotunda he followed the rule that the indications for the forceps should be danger to the mother or danger to the child, and the result was that he had only 20 forceps cases in the house. If this rule was still followed he asked why there were 40 forceps cases one year and only 20 another year? All through the report he found little imperfections which seemed to show that it had been carelessly put together.—Dr. F. W. KIDD said that they need not pay attention to the clerical errors appearing in the report. It was stated in reference to a case of rupture of the uterus that strips of iodoform gauze ten yards long were passed through the rent in the uterus into the abdominal cavity. This seemed to him an extraordinary length, but perhaps it was a clerical error.—Dr. H. JELLETT, speaking of the treatment of abortions, remarked that the number of cases in the house that were curetted was nearly 50 per cent. Though he could not say that the curetting had led to any bad results he thought they would do harm if they sent out men with the idea that 50 per cent. of abortions required curetting. The same idea had occurred to him as to others regarding the term "mixed hæmorrhage," but certain German writers divided accidental hæmorrhage into concealed, external, and mixed, the last meaning cases in which there was sufficient of both concealed and of external hæmorrhage.—The PRESIDENT said that though the mortality and morbidity results were very good he agreed that most of the cases had been reported in such a way as to leave the important points out. He commended the term "mixed hæmorrhage."—Dr. PUREFOY said that owing to the advanced hour of the evening he would like to defer his reply until the next meeting of the section.

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HARVEIAN SOCIETY OF LONDON.—At a meeting of this society, held on March 1st, Dr. W. H. Lamb, the President, being in the chair, Dr. Risien Russell made a communication on the Clinical Evidence upon which they Relied for the Localisation of Cerebellar Disease, illustrating his subject by lantern slides. While dealing with the question from a clinical standpoint frequent reference was made to the evidence derived from experimental physiology, and Dr. Russell showed how this was to be utilised in clinical work. In referring to the attitude which characterises a unilateral lesion of the cerebellum (inclination of the head to the affected side so that the ear and shoulder were approximated, and rotation so that the chin pointed to the opposite side) he said that this sign could not be too implicitly relied on in clinical investigations and quoted a case in which a tumour was situated in the opposite lateral lobe of the cerebellum to that indicated by the patient's attitude. Moreover, he had met with cases of cerebral tumour in which the same sign had been present in one of which the growth was situated too far forward to allow of the possibility of direct pressure on the superior peduncle of the cerebellum. Rotation was so rarely met with clinically and the direction of reeling was so inconstant that these phenomena were of little value in localisation, but ataxy of the limbs was commonly more marked on the affected side in unilateral lesions of the cerebellum. Motor paresis was sometimes met with in the limbs on the same side as the affections of the cerebellum and was an indication of cerebellar insufficiency, for such theories as had been advanced to account for it by pressure on the pyramidal fibres could not account for the fact that the phenomenon had resulted from softening of the cerebellum consequent on vascular occlusion. Convulsions did not belong to the symptomatology of cerebellar lesions, except as consequences of secondary disturbance of other parts of the central nervous system, unless Dr. Hughlings Jackson's view were accepted that peculiar tetanic-like seizures which occurred in certain cases of tumour of the middle lobe were of cerebellar origin. Rigidity followed experimental ablation, but when present as a result of disease of the cerebellum it usually indicated secondary interference with the pons, for with the cerebellum alone affected there was more likely to be hypotonia of the muscles. The state of the knee-jerks afforded little aid in localisation, for while there might be increased activity on the affected side, as after experimental ablation, there might, on the other hand, be diminution on this side or there might be great variability, or both might be abolished. Valuable information as to the side affected was derived from evidence of implication of the fifth, the seventh, and the eighth cranial nerves, and, in a few cases, of the twelfth; but even this evidence could not be relied upon as infallible, for in some instances one or other of these nerves might suffer on the opposite side instead of on the side of the cerebellar lesion.—Dr. Leonard Guthrie cited cases illustrating the difficulty in localising cerebellar lesions and even in deciding whether they existed at all. A boy, aged five and a half years, had typical "cerebellar" gait, loss of knee-jerks, ataxy, and "intention" tremors of the upper extremities, left-sided facial paralysis, headache, and increasing drowsiness and languor for nearly three months. He then made a rapid recovery and three years later remained in perfect health. Here symptoms of cerebellar disease were probably due to polyneuritis. Another boy, aged seven years, had cerebellar gait leading to astasia, weakness and ataxy of the right arm, loss of the left knee-jerk and exaggeration of the right, double optic neuritis, vomiting, and frequent headache referred to the left frontal region. The symptoms pointed to right-sided cerebellar lesion, but a cyst of the middle lobe of the cerebellum was discovered. This case showed that the "crossed cerebellar" headache was not so valuable a localising sign as it had been held to be. A lad, aged 18 years, who was now under observation, had "intention tremors," ataxy, and weakness of the right arm, slight spasticity of the right leg, with exaggerated knee-jerk and ankle-clonus but normal plantar reflex, shambling awkward gait, double optic neuritis, but neither headache nor vomiting. The symptoms, apart from the optic neuritis, resembled those produced by destruction of the right cerebellar hemisphere, yet they were not conclusive evidence of such a lesion. Finally, Dr. Guthrie mentioned a case in which symptoms pointing strongly to tumour of the right cerebellum proved to be due to tumour of the corpora quadrigemina.—Dr. H. A. Caley remarked on the clinical importance in relation to localisation and spoke of the association in some cases of unilateral paresis with a lesion of the cerebellar hemisphere on the same side. To overlook this point might lead to serious error in differentiating between cerebral and cerebellar lesions.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—An ordinary meeting of this society was held in the Medical Institution, Hope-street, Liverpool, on Feb. 15th, the President, Dr. J. B. Hellier, being in the chair.—Dr. H. Briggs (Liverpool) showed: 1. A Fibro-myoma almost completely calcified removed from a patient, aged 60 years, by Baer's operation. The tumour weighed five and a quarter pounds. The patient made a good recovery. 2. A Calcified Fibro-myoma weighing five and a half pounds enucleated from the parametric cellular tissue of a woman, aged 52 years. The patient died on the eighth day from exhaustion. In both cases ascites was present.—Dr. Lloyd Roberts (Manchester) showed a Calcified Fibro-myoma of the size of a child's head removed post mortem from a woman, aged 70 years.—Dr. T. B. Grimsdale (Liverpool) exhibited a Uterus with Multiple Fibro-myomata removed per vaginam by morcellation.—Dr. J. E. Gemmell (Liverpool) showed a Fibro-myoma removed by enucleation from a uterus three months pregnant. The pregnancy was not interrupted.—Mr. J. E. Burton (Liverpool) exhibited a Pedunculated Fibro-myoma removed by abdominal section.—Dr. A. Donald (Manchester) read Notes of a Case of Ruptured Extra-uterine Pregnancy and showed the specimen. The patient, aged 30 years, had been married four and a half years and had had no previous pregnancy. The menstrual periods were regular until October, 1899, but in that month the period was delayed four days. Uterine hæmorrhage then came on and lasted until the date of operation (16 weeks). In December the patient had sickness and nausea and was seized with pain in the right iliac region. Early in January, 1900, the sickness was very severe. The abdomen was distended and tender, and an obscure swelling was felt bi-annually in the right iliac region. The diagnosis was tubal pregnancy with rupture into the right broad ligament.

Palliative treatment was recommended as it seemed probable that the embryo had succumbed. The conditions improved somewhat—although the sickness was at times troublesome—until Feb. 3rd, 1900, when the patient had severe abdominal pain and marked increase of sickness and exhaustion. On Feb. 6th abdominal section was performed. The abdomen contained large clots and much fluid blood. A four months' fœtus and placenta were found lying loosely amidst coils of intestine. No sac and no amniotic fluid were seen. The pelvic organs were not felt, as they were completely shut off by adhesions. The abdomen was cleansed with gauze sponges, but no attempt was made to remove clots adherent to the intestines. A large quantity of iodoform gauze was packed into the abdomen. Convalescence after the first 48 hours was uninterrupted. The case was probably one of secondary rupture into the abdomen. Neither the fœtus nor the placenta showed any signs of maceration or degeneration. From a clinical point of view it was interesting that the most prominent symptom throughout was the vomiting and that even after the final rupture pain and exhaustion and symptoms of peritonitis were more marked than the signs of hæmorrhage.—Remarks upon the case were made by Dr. H. Briggs.—Dr. T. B. Grimsdale related a case of Metrorrhagia occurring in a single woman, aged 31 years. The bleeding had been almost continuous for three years. She had been in bed for 18 months and various modes of treatment, including plugging and electrical methods, had been tried without effect. Vaginal examination revealed no cause for the bleeding, the uterus being small and mobile. The uterus was explored and curetted, but three weeks later the bleeding again commenced with little diminution of the amount. The patient was extremely anæmic. Examination of the blood only gave evidence of simple anæmia. Abdominal section was performed and the ovarian arteries were ligatured. The bleeding immediately ceased and since then the patient had had a normal menstrual period lasting five days.—Remarks were made by Dr. Briggs, Dr. Donald, and Professor Sinclair.—Dr. Grimsdale replied.—Dr. Nathan Raw related two cases of Eclampsia treated with success. In the second case the patient appeared to be moribund for some hours after delivery. Two pints of normal saline solution were transfused into a vein. This was followed by immediate improvement and life appeared to be undoubtedly saved by this measure. Dr. Raw also showed a full term Fœtus removed by Cæsarean section after repeated attempts had been made to deliver by forceps. The child was dead, but the scalp and vertex showed extensive subcutaneous hæmorrhage.

MANCHESTER THERAPEUTICAL SOCIETY.—A meeting of this society was held on Feb. 28th, Professor J. Dreschfeld, the President, being in the chair.—Dr. Walker Hall made a communication on Mercuriol in Syphilis, describing Ahman's method of treating syphilis by means of cotton bags which were fastened to the front of the body and charged with mercuriol. The method was the outcome of Professor Welander's views as to the absorption of mercury when applied to the external surface being chiefly due to inhalation of the volatilised mercury. Mercuriol was described as an amalgam of mercury, aluminium, and magnesium, containing 40 per cent. of mercury. It was first prepared by Apoteke Blomqvist. It was stated that in this preparation the globules of mercury were in a condition of much finer division and were therefore more rapidly volatilised. The method were carried out by means of putting five grammes of mercuriol into a cotton bag (Welander's bag), which was fastened round the patient's body. These bags had a twill surface outside and a smooth soft texture inside. For a course of treatment 20 powders of five grammes each were required. For the first five days one powder was put in the bag every evening and afterwards a powder was put in every other day. The advantages claimed for the method were that it was the most elegant mode of administering mercury and that it was effective without producing bad results, such as dermatitis, stomatitis, or gastritis. The only precaution necessary during the treatment was to test the urine at least once a week; should albumin appear the treatment should be stopped for a few days. Dr. Hall showed specimens of mercuriol and of the bags used in the treatment.—Dr. R. B. Wild stated that he was using mercuriol but had not tried it long enough to be sure of the results. He doubted whether any method would cure syphilis in such a short time.—Professor Dixon Mann doubted whether mercuriol was a true amalgam. Globules of metallic mercury could be seen in it by a lens.—The President referred to a recent paper on the method of treatment by Dr. Schuster, who had obtained no good results from it and who had had to return to the use of mercurial ointment.—Dr. R. T. Williamson made some remarks on the Diminution of the Sugar Excretion in Diabetes during Medical Treatment, in which he pointed out how difficult it was to be certain that the diminution of sugar excretion was actually due to medicinal treatment. In mild cases of diabetes many factors might come into play to reduce the sugar excretion and it was necessary to eliminate these before drawing conclusions as to the beneficial action of drugs. Bearing this in mind he was, nevertheless, inclined to believe from experience in three cases that salicylate of soda did sometimes exert a favourable influence. In these three cases of mild diabetes in old people the sugar excretion diminished or disappeared after administration of sodium salicylate, although the patients were allowed to take nitrogenous and fatty foods and as much white bread and milk as they wanted, potatoes and sugar being practically the only foods excluded. Dr. Williamson found it necessary to increase the amount of sodium salicylate to 80 grains or 100 grains per day, and had not found any serious complications arise from these large doses.—Professor D. J. Leech read a paper on Saline Baths. He referred first to the pharmacological effects of the external and internal applications of sodium chloride solutions of various strengths, and then gave an account of some English and continental health resorts where sodium chloride waters were used medicinally, mentioning the various kinds of cases which were said to be benefited by the different baths. Professor Leech pointed out that the bromides and iodides present in some of these waters were in such insignificant amount that they could produce no effect, but calcium chloride in many cases was present in considerable quantity and might account for some of the beneficial results obtained by drinking certain waters.—The discussion on this paper will be taken at the next meeting.

CHELSEA CLINICAL SOCIETY.—An ordinary meeting of this society was held on Feb. 20th, Mr. J. Foster Palmer, the President, being in the chair.—Dr. Ewart gave an account of a case of Relapsing Pernicious Anæmia. The patient, a man, aged 43 years, had had eight attacks in all, from each of which he recovered under appropriate care and under treatment usually by arsenic, but on two occasions by iron. In December, 1899, he became an in-patient of St. George's Hospital and was treated with mercury and iron, together with daily supplies of soup made of mixed vegetables. The result was a great improvement in every respect.—Dr. Ewart also gave details of a case of Vertical Displacement of the Liver and Stomach and discussed the probable mechanism of the affection.—Dr. Vincent Dickinson read a paper on Gynæcological Therapeutics. There has always existed, he said, a school of practitioners whose aim has been to found a rational system of treating disorders of the female genito-urinary systems by vaginal injections and antiphlogistic drugs, their operation procedures being limited to the use of the lancet and a stick of lunar caustic. Recent improvements in surgery and the advent of the "abdominal surgeons" had brought about great changes in this department of practice, but in suitable cases it might be useful to give a more extended trial in the light of modern knowledge to some of those old bulwarks of the "Art of Physic" which without doubt made the reputation of the Sydenhams, the Lettsoms, and the Harfords of the last century. The subject was then reviewed under the following heads:—1. External applications, including caustic, astringent, antiseptic, resolvent, and anodyne. 2. Drugs exhibited internally, special reference being made to the use of cimicifuga in dysmenorrhœa, assafetida in repeated abortion, helenin, pulsatilla, salix nigra, viburnum prunifolium, &c. 3. Douches and baths, including the application of heat and cold. 4. Rest, exercise, and position. The use of the inclined plane, which was known to Hippocrates, was of value in the treatment of enlarged and prolapsed ovaries and in threatened attacks of pelvic peritonitis and irritation of the bladder. A less degree than raising the foot of the bed from 12 to 18 inches would not produce any effects. The effect of position on displacement of the uterus was also discussed. 5. Electricity. The results were best in the hard variety of fibro-myoma of the uterus and relief was often given to hæmorrhage and pain, although no appreciable diminution in the size of the tumour could be ascertained.—A discussion

followed in which the President, Dr. A. Symons Eccles, and Dr. C. A. Morris took part.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held at 20, Hanover-square, W., on Feb. 28th, Dr. H. Radcliffe Crocker, the President, being in the chair.—The President showed: (1) A man, aged about 50 years, exhibiting the Beneficial Effects of Treatment by a Free Use of the Knife in Rhinophyma; and (2) a case of Urticaria Pigmentosa in a boy, aged 14 years.—Mr. F. Jaffrey (introduced) showed a case of Urticaria Pigmentosa in an infant aged 12 months.—Dr. T. D. Savill showed: (1) A Case for Diagnosis in a man: ? Psoriasis, ? Seborrhœic Dermatitis; and (2) a boy with a Body Eruption of groups of Pruriginous Lichenous-looking Papules.—Dr. P. S. Abraham showed: (1) A man with Acne Varioliformis; and (2) a woman with Alopecia Areata. In the case of acne varioliformis there were similar spots on the backs of both hands.—Dr. Radcliffe Crocker remarked that it might be a case of the "acne lupus" of Tilbury Fox, and it appeared to correspond with his own description of "adenoid acne."—Dr. D. Walsh showed a case of a girl, aged 22 years, with very marked œdematous infiltration of the left hand and wrist, which condition had lasted for many weeks. A few months ago she had a similar attack which lasted several weeks and then cleared up. The right hand had also previously been twice attacked. There was a rheumatic history including heart trouble.—Mr. G. Pernet suggested that it was a case of hysterical œdema and gave references to similar conditions mentioned by Sydenham and Charcot.—Dr. Crocker was not familiar with the condition.—Dr. A. Eddowes showed: (1) A case of Sycosis; (2) a woman with Erythematous Patches on the Face and Neck; (3) two cases of Alopecia; (4) a male patient, aged 50 years, with (? specific, or ? malignant) Ulceration of the Left Cheek and Ear; (5) a man, aged 50 years, with Lichen Planus of seven years' standing and with Eczema Seborrhœicum of two years' standing; and (6) a woman aged 20 years, with Bazin's Disease.—Mr. G. Pernet exhibited a Hair from the Upper Lip from a case of Tinea Nodosa, showing the mycelial tubes closely arranged, side by side, bound together by cement substance, and growing more or less at right angles with the hair shaft. The cement substance formed a continuous covering over a free edge.—Mr. Pernet also read a note of a case of Tinea Versicolor of the Face, by Dr. Arthur Powell of Kalain, Cachar, East Bengal. Photographs of the case were shown and the fungus prepared from scrapings was also exhibited under the microscope.—The President, Dr. Rufenacht Walters, Mr. T. J. Hitchins, and others joined in the discussions.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held at the West London Hospital on March 2nd, Mr. L. A. Bidwell, the Vice-President, being in the chair.—Dr. Campbell Pope showed a case of Bradycardia in a child. The girl, aged nine years, had had pleuritic effusion on the left side following whooping-cough two years previously. She had also been run over and had been kicked in the head by a horse. The usual pulse-rate was 33.—Dr. Campbell Pope also showed a man who had been operated on by Mr. Marmaduke Sheild for Abscess of the Spleen.—The cases were discussed by Dr. Seymour Taylor, Mr. Rickard Lloyd, and Mr. L. A. Bidwell, and Dr. Campbell Pope briefly replied.—Dr. Seymour Taylor showed a case of Palsy of the Sixth, Seventh, and Eighth Cranial Nerves.—Remarks were made by Dr. S. D. Clippingdale, Mr. G. Pernet, Dr. Campbell Pope, and Mr. R. Lake, and Dr. Seymour Taylor replied.—Dr. Phineas Abraham showed two cases of Skin Disease: (1) a case of Pemphigus, and (2) a case of Dermatographia. The latter was an extremely well-marked instance of a rare affection. Some words which had been written on the skin of the chest in the afternoon were quite distinct at a late hour in the evening and indeed still stood out prominently from the surrounding skin.—Mr. L. A. Bidwell made some interesting remarks on the condition and Dr. Abraham replied.—Mr. H. J. Paterson showed a case of Psoriasis. There was great difficulty in the diagnosis between simple and syphilitic psoriasis. Although the eruption had the character of a syphilitic rash, and although it had not the appearance and distribution on which they relied in making a diagnosis of simple psoriasis, yet the general opinion was that the case was one of simple psoriasis.—Remarks were made by Dr. Phineas Abraham, Mr. G. Pernet, and Dr. T. H. Dickson.—Mr. L. A. Bidwell showed two cases of Pyloroplasty.—Dr. A. H. W. Clemow showed a case of Excision of the Pylorus in which the operation had been performed by Mr. C. B. Keetley with excellent result.—Mr. Matthews Duncan, for Dr. F. G. D. Drewitt, showed a case of Aneurysm of the Aorta in a woman aged 41 years.—Mr. Bassano showed a man suffering from great Deformity of the Chest on the left side due to congenital absence of ribs.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held at the Kidderminster Infirmary on March 2nd, Mr. J. Lionel Stretton, the President, being in the chair.—The President read notes of the case of a female infant, aged 19 months, who was brought to him because she made a Double Stream of Urine. On examination two small orifices were discovered, one close to the clitoris and a second about three quarters of an inch behind it; a probe passed in at the anterior orifice struck a director passed in at the posterior orifice. On slitting up the tissue between the two orifices the urethra was discovered immediately under the posterior one; the vestibule had been roofed by the adhesion of the two labia minora and the only escape for the urine was through two small openings. The condition was congenital; no mention of it was found in the ordinary text-books.—The President also showed a multilocular ovarian cyst which he had removed from a woman, aged 53 years. It had evidently ruptured some time before removal as the abdominal cavity contained much fluid and there was a round hole in the cyst wall through which the fluid had escaped. The cyst weighed 8 lb. and 12 pints of fluid were removed. The rupture of the parent cyst had not given rise to any acute symptoms.—Dr. B. Addenbrooke read notes of the case of a woman, aged 36 years, who had been confined one month previously, delivery being instrumental. 48 hours after labour she had a maniacal attack which passed off in a few days and she did well for a fortnight, when she complained of a swelling extending from the left inguinal region to the mid pubes. An incision was made, foul-smelling pus was evacuated, and on introducing the finger the pubic bones were found to be bare and separated about one-eighth of an inch. The patient made a good recovery.

ERRATUM.—In the report of the meeting of the Society of Anæsthetists in THE LANCET of Feb. 10th, p. 389, the expressions "specific gravity 1017" and "specific gravity 1020" ought to be respectively "specific gravity 0·817" and "specific gravity 0·820."

# Reviews and Notices of Books.

*Essentials of Modern Treatment of Disease: for the Use of Practitioners.* Alphabetically arranged for ready reference. By K. M. NADKARNI, Associate Editor *Indian Medico-Chirurgical Review*; formerly Editor *Doctors' Magazine*, Bombay; Fellow of the Incorporated Society of Science, Letters, and Art of London, &c. Madras: N. K. Rao and Co. London: Baillière, Tindall, and Cox. 1898. Price Rs. 4 and Rs. 5.

WE do not think that the aim of this little work can be better stated than has been done in the preface. Its author's object has been to supply the busy practitioner with a pocket compendium of ready reference containing an epitomised account of the various modes of treating each disease recommended by eminent authorities of various countries in order to widen the resources of the practitioner as far as practicable. It contains some 460 pages and consists of two parts which can be obtained bound together in one volume or separately in two, each with interleaves. For facility of reference it could not be well improved. The treatment of 600 diseases is arranged alphabetically and 800 prescriptions gleaned from various sources are also added. It need scarcely be said that in addition to the standard and recognised treatises which have been laid under contribution a voluminous amount of periodical literature devoted to medical science has of necessity had to be consulted and ransacked in the compiler's therapeutical journey in search of well-established and useful methods of treatment as well

as of those of a more novel and consequently less accredited kind. In a work of this kind everything obviously depends upon the amount of care, judgment, and discrimination exercised in its production. It would have been impossible to have gone through the volume from cover to cover, nor is it necessary. We have followed the plan familiarly adopted by the cheese-taster—that of testing its nature and quality by small samples from within, and judged in this way the work seems to us to have been brought up to date and to be well done. The plan followed is to give the briefest possible description of the disease, the principles on which it should be treated and the therapeutical indications for its treatment, with the remedial agents and formulæ that may be most usefully selected and employed for obtaining the end in view. Books of this kind are not of course intended to teach what should have been acquired elsewhere or to give that kind of scientific and systematic knowledge which the practitioner presumably possesses already, but to afford a ready reference and reminder to such as are busily engaged in the practice of their profession, and this the little handbook on the "Essentials of Modern Treatment of Disease" seems calculated to do.

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*Microscopic Researches on Glycogen, Part II.: Glycogen of Snails and Slugs in Morphological and Physiological Correspondence with the Lymph System of Vertebrates.* By CHARLES CREIGHTON, M.D. Aberd. With Plates. London: Adam and Charles Black. 1899. Pp. 127. Price 7*s.* 6*d.*

IN the first part of this work, published in 1896, Dr. Creighton gave the details of his observations on the characters and functions of glycogen in the embryos of mammals, and showed how he had been led to regard it as the precursor, or the temporary substitute, or the accessory of red blood. In the present part he describes with great precision the distribution of glycogen in the invertebrata, the mode in which, and the period when it is deposited in various examples, and develops at some length the view which he has been led to adopt. The relations between glycogen and the lymphatic and hæmal systems do not at first sight seem obvious. It is startling to find a solid carbohydrate starch or its modification regarded as the blood of vegetables, and to discover further that in Dr. Creighton's opinion glycogen or animal starch is coördinate in value with the blood or lymph of animals, but the reasoning by which he has been led to this conclusion is both ingenious and cogent. There can be no question that starch plays a very important rôle in vegetable life. It is very constantly present when growth and development are about to take place, being sometimes stored up in large quantities in roots and tubers and bulbs, and these stores are exhausted as development and growth proceed. It is not, then, unreasonable to name starch as a fixed instead of a fluid nutriment and to regard it as the equivalent in plants of the blood in animals. The occurrence of a substance in animals resembling starch in composition but differing from it in giving a red reaction with iodine instead of blue has long been known, and Dr. Creighton has collected the observations of many chemists and biologists showing how much attention has been paid to this subject and how wide is the distribution of animal starch. It has been found in protozoa, less distinctly in cœlenterata and vermes, very clearly in the chief families of mollusca, and in arthropods. Great interest attaches to the positions occupied by the material. In the higher mollusca, which have been the special object of Dr. Creighton's investigations, it is accumulated around the vessels and is contained in large plasma cells around those of the nerve centres and of the digestive and generative tracts—that is to say, exactly in those parts which are nearest to the sources of supply and those in which the most active processes are taking place. In the arthropods it is also found in the organs of reproduction as well as elsewhere at certain stages of development. Now, the plasma cells in the mollusca mentioned above, with their contained zo-amyline, occupy the position of the vascular sheaths of the vertebrata, and just as the tissues in the vertebrata derive their pabulum from the lymph which circulates in the perivascular sheath so do the tissues of the mollusca draw their nourishment from the carbohydrate stored up in the plasma cells. In the vertebrata the original vascular system of the molluscan series no longer contains a lymph-like fluid, but is filled with red blood. The nitrogen required for the assimilative processes must of course be derived from other sources, as from the plasma of the plasm cells or from some combination with proteid which the glycogen subsequently forms, and in connexion with this it is to be remembered that glycogen is present in large quantity in embryonic structures where it precedes or accompanies the development of blood and in various pathological formations. The treatise is illustrated by many original drawings and is well worthy of study.

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*La Pratique des Accouchements: Obstétrique Journalière* (*Midwifery Practice: Everyday Obstetrics.*) By Professor HENRI VARNIER. Paris: G. Steinheil. 1900. 8vo. 440 pp. in Two Columns. 387 Illustrations. Price 26 francs.

THE ideal which the author has laid before himself in this book is to produce a work which will enable the student when consulted by a patient who believes herself to be pregnant to recognise the condition, to carry the patient safely through her period of gestation, and to ensure for her a safe and normal delivery of a living child and an uncomplicated puerperal period.

The "Obstétrique Journalière" is divided into four chapters. The first of these is concerned with the Diagnosis and Hygiene of Normal Pregnancy. With the aid of reproductions of all the most important sections of early pregnant uteri the author points out that the diagnosis of pregnancy in the first few months depends upon the recognition by physical examination of the typical tumour formed by the developing uterus. As he is a follower of Professor Pinard it is not surprising to find that the study of the uterus during the second half of pregnancy by abdominal palpation is discussed in great detail. Not only are the methods of recognising the normal position of the fœtus fully explained, but in cases where any abnormality of presentation is met with the method of correcting it by external manipulation is clearly laid down. This is one of the best chapters of the book and is illustrated by a large number of photographs and drawings from nature. The concluding section of the first part is devoted to an account of the best methods of performing the important duties imposed upon a medical man who is responsible for the care of the health of a pregnant woman. He must take means to safeguard her from all conditions likely to produce a premature confinement, and he must carefully regulate the various functions of the body, especially those of assimilation and excretion, so as to ensure for the infant a rapid and safe birth and for the mother a normal confinement and puerperium.

The second chapter treats of the diagnosis, prognosis, and conduct of labour, and also contains an analytical and clinical study of its course. That the long-debated question as to the condition of the cervical canal at the commencement of labour may be finally considered as decided is amply proved by the author's researches and his figures. The stage of dilatation of the cervix and the part played by the bag of membranes is admirably described and illustrated. The author's method of preserving the perineum is shown by a series of photographs.

He aims at preventing the birth of the forehead and the occurrence of extension of the head until the parietal eminences have emerged from the vulva and the neck has become well engaged under the symphysis pubis. In his analytical study of the course of labour Professor Varnier enables us to follow (very fully), with the aid of many excellent illustrations, the various changes that occur in the genital canal, the uterus, and the child during the progress of the latter through the pelvis. Under the Prognosis and Conduct of Labour its duration, its special characters in old primiparæ, the effect of occipito-posterior presentations and of multiple gestation are all considered. Lastly, the indications for the applications of forceps and the special dangers of their use are discussed.

The Delivery of the Placenta and Membranes is studied, partly anatomically and partly clinically, in the third chapter. The researches of Schroeder, of Barbour, and of Pinard, in conjunction with the author, are all quoted. The reader is given the choice of three methods of delivering the placenta—traction upon the cord, Crédé's method of expression, or the combined method recommended by Professor Pinard of traction and expression.

In the last chapter the author describes the progress of a normal puerperium and the changes that occur in the genital canal and the uterus. The description of the involution of the uterus is particularly full and is illustrated by numerous original drawings and photographs. A most interesting historical account is given of puerperal fever, and the great debt that we owe to the labours of Semmelweiss, Simpson, Pasteur, and Lister is duly acknowledged.

The necessary details of antisepsis and asepsis in midwifery practice are treated with great fulness and a most complete account is given of the various organisms met with in the different varieties of septic infection and septic ntoxication.

The printing and illustrations are worthy of the highest praise and the author is to be congratulated upon the production of a most interesting book embodying the results of a large amount of original work of great value. An intelligent study of this volume should go far towards equipping the student with a complete knowledge of the course of normal labour and enabling him to become the perfect accoucheur of Dionis, who holds, as Professor Varnier points out, that such a man should be a "man of perfect honesty and skill, simple, unaffected, and full of sympathy for the sufferings of women in childbed."

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*Spencer's Disease: Dermatitis Multiformis Exfoliativa.* By WALTER SPENCER, M.D. Brux. London: Pewtress and Co.

THE author of this pamphlet of 16 pages anticipates the gratitude of posterity and christens what he considers to be a new disease after his own name. The disease broke out in a lying-in hospital in Sydney to which the author is physician, and between Oct. 1st, 1898, and March 31st, 1899, out of 48 children born 25 were attacked and five died. The elementary lesion varied, showing "erythema, macule, papule, vesicle, pustule, or bulla as the initial sign." It was an infectious dermatitis of sudden onset without premonitory symptoms, showing special affinity for infants under three weeks old but avoiding adults, usually unattended with any constitutional symptoms, and the polymorphic eruption underwent a rapid evolution until it became lost in exfoliation more or less extensive. In cachectic subjects it proved rapidly fatal. The author, after comparing the symptoms with those of Ritter's disease, pemphigus neonatorum, and other somewhat similar affections, came to the conclusion that it was a disease *sui generis*. As far as we can judge from the author's description the condition was probably due, like pemphigus neonatorum, to staphylococcus aureus infection and the sanitary arrangements of the hospital should be carefully investigated.

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*A Manual of Diseases of the Nose and Throat.* By CORNELIUS GODFREY COAKLEY, A.M., M.D. London: Henry Kimpton. 1900.

THIS is a handy and well-printed volume of 536 pages. It contains a full index, 92 engravings, and two coloured plates. Generally speaking the engravings and plates are well executed. Special attention is devoted to the methods of examination and diagnosis. Although both in diagnosis and also in treatment many considerations and methods are omitted, the author aims at describing those which his experience at the New York hospitals leads him to believe are most trustworthy and useful to the student and practitioner. The book is not quite free from faults so often noticed in "special" treatises on the throat and nose. For instance, to make seven varieties of hypertrophic rhinitis seems hardly needful. The chapter on Laryngeal Nerve Affections is distinctly good and clear. Professor Keen has added a short chapter containing his methods of performance of the more extensive laryngeal operations. A feature of the book is an appendix of excellent formulæ which are also scattered through the book. Altogether this work may be recommended to students and practitioners as a trustworthy guide for diagnosis and treatment of the maladies with which it deals.

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## LIBRARY TABLE.

*Natural and Artificial Methods of Ventilation.* London: Robert Boyle and Son, Limited. 1899. Pp. 65.—The contents of this little anonymous book appear to have been collected to form a diatribe against all mechanical or artificial means of ventilation. Of course, we have yet to learn how to ensure efficient ventilation that shall be conducive at the same time to comfort and to health. There are arguments in favour of so-called natural ventilation and there are arguments in favour of so-called artificial ventilation. Which is best adapted for the purpose depends mainly on the circumstances of environment. After all, ventilation implies essentially the removal of contaminated air and it does not matter much whether this removal be effected by the vagaries of atmospheric movements or by mechanical contrivances. That efficient ventilation is essential to health no one disputes and everyone will welcome the system which best fulfils this end. This little contribution is very instructive and those who would be familiar with the *pros* and *cons* of the various methods of ventilation will find it a convenient source of reference.

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CORNELIA HOSPITAL, POOLE.—At the annual meeting of the friends of this institution, held on Feb. 28th, it was stated that there was a deficiency of £700 during the past year, and that Lady Wimborne had paid it off.

CARDIFF INFIRMARY.—The annual meeting of governors and others interested in this institution was held on Feb. 28th under the presidency of General Lee. The annual report stated that during 1899 there had been 1700 in-patients admitted. The out-patients numbered 13,556, an increase of 513 as compared with the preceding year. The financial statement showed that the ordinary income amounted to £6988, an increase of £98 as compared with 1898. Legacies and donations amounted to £2600 and the subscriptions of working men had increased by £300. The total expenditure was £9050, an increase of £520 as compared with the previous year. The chairman stated that the adverse balance of the infirmary was now about £8000

# THE LANCET.

*LONDON: SATURDAY, MARCH 10, 1900.*


THE analysis which we have given of that portion of the report of the Indian Plague Commission dealing with the anti-plague inoculations will have shown that it is a very able and painstaking criticism of the HAFFKINE system. Nothing of importance has been omitted in the survey by the Commission, and though their views on the bacteriological aspects of the subject are somewhat theoretical in their character, as distinguished from the results obtained by the practical application of the prophylactic, yet the report forms, on the whole, a valuable commentary on the inoculations and will strengthen the basis on which they are founded. We search in vain, however, for a due and sympathetic appreciation of the great work performed by Mr. HAFFKINE and by the medical men and civil officers who have assisted him. In its absence it is particularly gratifying to notice that Lord CURZON, in the resolution of the Government of India on the Commission's report, has not forgotten this aspect of the question and has paid a high tribute to Mr. HAFFKINE.

It is evident from a perusal of the report that the Commission are not influenced or restrained by any special regard for either the difficulties or conditions under which the work has been carried on in India. The highest scientific standards have been set up and compared with existing arrangements. As might be expected, the comparison is much to the disadvantage of the latter, in which it is shown that important defects obtain in the use of cultures of different ages and in the methods of decanting, bottling, preserving, standardising, and fixing the dose of the vaccine. Fortunately, none of these can be shown to have had any injurious effect on the inoculated, though it is probable that they have placed the prophylactic under unfavourable conditions for attaining the best results. The remedy for these defects is only discussed in a general way, but there can be no doubt that it consists in providing in the laboratory more scientific workers and more plant and making adequate arrangements for manufacture of the vaccine on a large scale. With a more uniform period allowed for the ripening of each culture and the selection of flasks which give a uniform growth there would be no need to vary the dose according to the opacity of cultures, and there would be no difficulty in standardising the vaccine by ascertaining the febrile reaction produced by certain samples. The methods in use and their defects were evidently forced on the laboratory by having to meet a large demand with an insufficient organisation, and now that the Government of India have accepted this portion of the Commission's report we trust that suitable arrangements will be made, if they have not already been carried out, to meet the requirements.

Of even greater importance than the criticism on the methods adopted are the views expressed by the Commission on the composition of the prophylactic fluid and the relative value of its constituents. They are of opinion that the efficacy of the vaccine lies wholly in the bacterial sediment and not in the supernatant fluid. Considering how much this means if true we are astonished to find that the reasons are mainly hypothetical, for the small amount of the evidence and the experiments brought forward cannot be taken seriously to affect the question, while, as a matter of fact, the conclusions based on the experiments mentioned have been discounted to a certain extent by later ones. The arguments against Mr. HAFFKINE'S views are academical in their nature until it can be shown by numerous experiments on man that the supernatant fluid is useless in plague inoculations. This is tantamount to beginning the observations on man over again and comparing the prophylactic effect of the bacteria and of the supernatant fluid separately. This has not been suggested by the Commission. In the meantime it is to be noted that not only the plague attacks but also the case mortality in plague are reduced by the present vaccine, the composition of which is based on the experience gained by Mr. HAFFKINE in his observation on cholera inoculations and by the fact then discovered by him that the bacilli alone did not affect the case mortality.

Nor do we think the Commission have been more fortunate in attacking Mr. HAFFKINE'S method of statistical expression and adopting another which is obtained by subtracting percentages. The latter is not only an unusual method, but it is also misleading. To work out the percentage of deaths and attacks among the inoculated and non-inoculated and then subtract the percentages from one another is an erroneous method of arriving at the relationship between the two. We must regard the relationship existing between two quantities as expressed, not by the differences between them which indicates how much larger the one is than the other, but by how many times the one is contained in the other. To illustrate this let us suppose that typhus fever has a mortality equal to 15 per cent. of the persons attacked and measles has a mortality equal to 5 per cent. of the attacks. We cannot express the relation of these by simply subtracting one from another and stating the difference between the percentages as 10 per cent. The actual relation consists in the ratio between the two. Thus typhus fever is three times as fatal as measles. The fatality of the first disease exceeds that of the last by 200 per cent. It is obvious from this illustration that the Commission have been led astray by their own statistics, and we are not surprised to find that they are unable to give an arithmetical value to the results secured by the inoculations. The subject, however, is treated at greater length on p. 724. In this connexion it is only fair to say that in their synoptical tables the ordinary ratios are given. Notwithstanding this defect in the report there can be no doubt as to the thoroughness with which the investigation has been entered into and the care which has been taken before coming to conclusions which are highly satisfactory as regards the merits of the inoculations. From their study of the nature and effect of the anti-plague prophylactic the Commissioners sensibly conclude that the inoculation quickly diminishes the incidence of plague

attacks and deaths in the inoculated population, that the protection continues for some weeks, possibly for a number of months, and that under the safeguards and conditions of accurate standardisation and sterilisation of the vaccines and other simple precautions the inoculations should be encouraged whereever possible, and in particular among disinfecting staffs and the attendants of plague hospitals.

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THERE are several papers of much interest at the present time, seeing that our thoughts are now focussed on what is going on in South Africa, in the seventeenth volume of the Transactions of the American Surgical Association of 1899 just published. The articles to which we may specially refer those interested in military surgery—as who is not just now with the excellent surgical and other work which is being done by officers of the Royal Army Medical Corps and with the admirable contributions from the theatre of war by Sir WILLIAM MACCORMAC to THE LANCET fresh in their minds—are those on the "First-aid Package in Military Surgery," by N. SENN, M.D.; "Observations upon the Organisation and Equipment of Military Field Hospitals in the Volunteer Army," by GEORGE RYERSON FOWLER, M.D.; and one on "The Effects of Modern Small-arm Projectiles, as shown by the Wounded of the Fifth Army Corps during the Campaign resulting in the Capture of Santiago de Cuba," by CHARLES B. NANCREDE, M.D., together with a report of the discussion on the surgery of the Spanish-American war consequent on the reading of these papers.

We cannot on the present occasion deal with the many interesting and important matters contained in the volume of the Transactions of the American Surgical Association but must content ourselves with a brief reference to a few points in the first-named paper. Dr. SENN of Chicago says that it is fortunate for the armed forces of the world but unfortunate for military surgery that no great wars have occurred since antiseptic and aseptic surgery came into general use. This void, we may remark, is being filled in with the results of the recent experience of the Americans and by those of the much wider and more recent experience now being acquired in the campaign in South Africa, which, we may well hope and believe, will add much to our knowledge that will prove of benefit to humanity in general and to the practical improvement of military surgery in particular. During the time that the Franco-Prussian war was being fought LISTER was quietly at work framing the great principles which have altogether re-cast the work of the surgeon. Antiseptic and aseptic surgery have not hitherto had a full and fair trial on an extensive scale on the battle-field. Without following Dr. SENN through his brief historical survey of the progress of Listerism and its adaptation to battle-field surgery we may say that he correctly states that the first tentative efforts to practise asepsis in military surgery were made by REYHER and VON BERGMANN in the Russo-Turkish war. Two things were brought out clearly during that war—viz., the value of a first-aid antiseptic occlusive dressing in the prevention of wound-infection and the importance of immediate mobilisation of gunshot fractures—the latter being sometimes a very difficult thing to accomplish, we may parenthetically remark, under all the exigencies of battle. REYHER and VON BERGMANN did most excellent service on that occasion in condemning the too common practice of searching for and extracting bullets on the battle-field and in hospitals. It soon came to be recognised that the first great division that has to be made of gunshot wounds, as regards their favourable progress or otherwise, is into the befingered and unbefingered. Although we cannot, unfortunately, in practice trust to such a protective agency wen evertheless carry in our own persons an aseptic material in the blood which is effused, dries up, and seals our wounds if only it could be always kept aseptic and unmixed with any "baser matter" of pathogenic germ origin. We are a long way yet from having realised perfect asepsis on the battle-field and Dr. SENN is obviously right in saying that better results will be obtained by the use of dressing material impregnated with an antiseptic substance than by one composed of simply sterile material.

The value of antiseptic and aseptic precautions in military practice was afterwards demonstrated on a limited scale in Bulgaria, Servia, Chili, Greece, Turkey, Japan, and in Africa and in the late Spanish-American war. In India during the Afghan campaigns and in the late tribal wars on the North-Western frontiers antiseptic precautions and practice were generally followed, and in our Egyptian war of 1882, with its small engagements ending with the battle of Tel-el-Kebir, it was shown that no case of infective wound disease occurred among the wounded, nor did any soldier lose his sight out of the large number of cases of ophthalmia that occurred in the British army serving in Egypt—results attributable to the wide use of antiseptic agents and dressings. Dr. SENN describes the first-aid antiseptic dressings used by different armies, including that of America, and tells us that during the Spanish-American war the Surgeon-General issued 270,000 first-aid packages to the troops in Cuba and Porto Rico and the soldiers in home camps. A dry dressing is the best means of preventing wound infection, and, as Dr. SENN points out, nothing should interfere with the conversion of the wound secretion and dressing employed into a dry crust which hermetically seals the wound.

Mr. TREVES has told us, as the result of his experience in South Africa, that the field dressing carried by every British soldier answers its purpose admirably and that Tommy Atkins "has a great regard for it and takes every care he has it on him." All the smaller wounds can be dressed by this means at once and no further dressings are commonly required. The first field dressing now in use in the British army is an adaptation of that employed in the French service. It forms a component part of the soldier's kit on active service so as to be available at all times and in all places as a first dressing for wounds, and when he goes into action it is placed in the pocket on the right side of the tunic. The antiseptic agent used is corrosive sublimate, 1 in 1000, and directions for use of the first dressing are printed both on the outside and the inside covers. A detailed description of this first field dressing, together with some very clear and excellent remarks and directions regarding the objects sought to be obtained and the precautions and methods to be followed in the use of antiseptics generally in wounds and operations, are given

in the official manual issued for the men of the Royal Army Medical Corps.

Dr. SENN lays down the requirements which a first-aid package for use in the field must meet, and at the end of his paper he emphasises his conclusions. He declares that first-aid packages are indispensable on the battle-field in modern warfare, and in this all who joined in the discussion seemed to be in accord with him; that the dressings should be sufficiently compact and light to be conveniently carried by the soldier and in such a way as to be conformable to military regulations; that the Esmarch triangular bandage, although of great value in the school of instruction, is in a first-aid package inferior to the gauze bandage; that the first-aid dressing must be applied as soon as possible after the receipt of the injury; that the dressing must be dry and should be kept so, and that it should not be disturbed unnecessarily, but any defects should be corrected at the first dressing station. He considers that the first-aid dressing, if employed behind the firing line, should be applied by ripping up the clothing over the injured part without removing it. The dressing is to be fastened to the skin with strips of rubber adhesive plaster, the bandage being applied over and not under the clothing.

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THE friends of sheer quackery, as well as those persons who in a desire to be open-minded favour the claims of irregular medicine, will point with triumph to the fact that the General Medical Council failed to get a judgment against Mr. ALABONE in the North London Police-court "for wilfully and falsely pretending to be a doctor of medicine, and wilfully and falsely using titles and descriptions implying that he was recognised by law as a practitioner in medicine." It is not in mortals to command success. They can only deserve it. And it may be that the General Medical Council, whose legal procedures have met with considerable criticism, in this case deserved success without attaining it. It may be, however, that though their case was a good one their presentation of it was not.

We withhold a final opinion on this point; but meantime we can explain why, with no prepossession in favour of Mr. ALABONE, the magistrate should have decided as he did. Mr. S. G. LUSHINGTON, the counsel for the prosecution, pointed out that the defendant described himself as EDWIN W. ALABONE, M.D. Bellevue College, M.D. Phil., U.S.A., D.Sc., F.R.M.S., Ex-M.R.C.S. Eng., and added that the degrees of the Bellevue College, New York, and the Jefferson Medical School, Philadelphia, were registrable in this country, and that the defendant had adopted a style which might lead the public to believe him to be a registered medical man. (The titles in question are no longer registrable, but that is a detail[1]). Mr. ALABONE'S counsel, Mr. SCHULTESS YOUNG, naturally made a strong point of Mr. ALABONE'S candour in stating the American source and origin of the degrees on the possession of which he based the use of his titles. Mr. YOUNG said that since the Royal College of Surgeons of England removed Mr. ALABONE from its list of members he had been careful to state the American origin of all his degrees "so that no one could be deceived." Mr. YOUNG took the ground in defending his client that it could not be said that he was wilfully and falsely representing anything when he only represented that which was true. This formed a powerful appeal to the magistrate, and we do not wonder that in the absence of more explicit evidence of the source of Mr. ALABONE'S American degrees the summons was dismissed. The magistrate held, and we think rightly, that because the defendant said that he was an M.D. of Bellevue College and an M.D. of Philadelphia, he must not be assumed to have implied that he was an M.D. of the Bellevue College of New York and of the Jefferson Medical School, Philadelphia, both of which degrees at one time entitled their holders to registration in England. But would the magistrate have taken the same favourable view if the nature of the two institutions whence Mr. ALABONE derived his degrees had been brought to his notice by the General Medical Council? It may be said that the admitted facts concerning the way in which Mr. ALABONE'S American degrees were obtained ought to have given sufficient information to anybody on the subject, but we do not think that the magistrate understood what kind of distinctions Mr. ALABONE was candidly laying claim to. The only Bellevue College in the United States, not the Bellevue College of New York, appears to be the Bellevue Medical College of Boston. It is thus described in the list of medical colleges issued by the Illinois State Board of Health:—

"Bellevue Medical College of Massachusetts, Boston, Mass. Organised in 1880. Fraudulent. Exposed by the Illinois State Board of Health in 1882."

The same excellent publication dealing with medical education in the United States and Canada speaks as follows of the Philadelphia University:—

"Philadelphia University of Medicine and Surgery (Eclectic), Philadelphia, Pa. Incorporated in 1865. Fraudulent. Extinct in 1880."

There does not seem to be any other Philadelphia University. Now these are not institutions which could give or could ever have given reputable diplomas, diplomas which a man ought to care to have, or which an English court, fully informed, would be likely to regard as other than bogus. But apparently the prosecution was not ready with this full information. The United States is a large place and in the absence of any such evidence it is intelligible that Mr. PAUL TAYLOR should have concluded that the degrees possessed by the defendant were proper *bonâ-fide* medical degrees, upon which it followed that he must consider the prosecution instigated by the General Medical Council a vexatious one. It was not a vexatious prosecution, but it does not appear to have been a well-conducted one.

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THE President of the Local Government Board received at the House of Commons on March 7th a deputation representing various hospitals and infirmaries throughout Great Britain. The object of the deputation was to ask that these institutions should be exempted from local rates. Everyone knows the stereotyped programme for a deputation to a public Minister. The deputation is introduced and proceeds to lay the matter

[1] These degrees are registrable if obtained prior to June 25th, 1886, as additional titles by practitioners previously registered. (See Medical Register, Table I.)

nearest its heart before the Minister. That gentleman replies in the regular official form to the effect that the objects of the deputation are worthy of the highest praise, but that, though these objects are of the deepest interest to himself personally, he is unable to give any other answer than "the subject will be carefully considered," or "a Royal Commission is sitting," or "a Committee to inquire will, I hope, be appointed."

The deputation of Wednesday last followed the usual type. Some of the most influential and hard-working of those interested in hospital work attended, and stated to Mr. CHAPLIN through the medium of a memorial that the institutions in which they were interested were almost entirely carried on by voluntary efforts and that the services rendered were practically given without cost to, or payment by, the public. The institutions relieved the poor-rates to an incalculable extent and yet had to pay towards these rates. The annual amount of rates payable on hospitals and infirmaries in Great Britain was, according to the memorial, about £50,000, of which sum £21,801 were raised in the metropolis of London. Until the year 1865 hospitals were not considered to be rateable, and Parliament had from time to time exempted churches and chapels, buildings occupied by societies for the promotion of science, free public libraries, and Sunday and voluntary elementary schools, from the payment of rates. In Birmingham and Halifax hospitals paid no municipal rates and in Ireland all hospitals and charitable institutions were exempted from paying both poor-rate and county cess. Mr. CHARLES BIRT, who spoke as the representative of the London Central Hospital Fund, added that if London hospitals were exempt from the payment of rates, provision could be made for 4000 more in-patients than at present—a statement that should have great weight at the present time when so many beds in our largest hospitals are closed for want of means. Mr. CHAPLIN, in reply, said that of course everyone must sympathise with the object which the deputation had in view—namely, that the voluntary hospitals should be able to extend their operations even more widely than at present. It was true that there were certain institutions which did not pay rates, and also true that hospitals did not pay rates before 1865. But he was not quite sure that hospitals stood upon the same footing as the institutions which were exempt. It would not follow, for instance, that the relief in all cases would be wholly to the rates of the district in which the hospital was situated. Patients came to some hospitals from all parts of the country and therefore the ratepayers in one particular district would be bearing additional burdens, and not only those of their own people but those of patients who came from a distance and ought to be supported by outside districts. If they were to exempt hospitals where were they to stop? Another point was that the whole matter of local taxation was being considered by a Royal Commission. They must not think, however, that he was the least indifferent to the subject. He would very carefully consider the question and would lay it before his colleagues at the earliest opportunity.

We do not suppose that the deputation expected any other answers than one or more of those which we have indicated as being, and being of necessity, the regular official answers, but Mr. CHAPLIN'S words of reply are by no means convincing to those who advocate the relief that is being prayed for. If only a local institution should be exempt from rates why is it that the London Library, the Royal Institution, and Spurgeon's Tabernacle are exempt? The London Hospital is specially exempted from the payment of rates by a local Improvement Act, so that Mr. CHAPLIN'S doubt as to where things would stop may be answered by a reference to the case of that charity. The rating of the London hospitals produces a sum under £22,000 per annum. Exemption from this tax would mean a great deal to the hospitals in question and would hardly be felt as an addition to the enormous sums now raised by the local rating authorities. Exemption would of course hit some parishes harder than others. Chelsea, for instance, has within a stone's throw of one another two hospitals, and part of a third—namely, the Cancer Hospital, the Chelsea Hospital for Women, and part of the Brompton Hospital for Consumption. But we do not suppose that the loss to this parish of the rates paid by these charities would be so very serious that the case of Chelsea ought to be used as an unanswerable argument against remission of the rates, and in most other parishes exemption would scarcely be felt at all. The deputation, in our opinion, made out a very good case for exemption, and we earnestly hope that the matter will not be allowed to drop, but will again and again be pressed upon the notice of those in power.

# Annotations.

"Ne quid nimis."

## THE QUEEN'S VISIT TO IRELAND.

WE have learned with admiration of the Queen's expressed intention to visit Ireland next month. Her Majesty's motive is easy to read and does both her heart and her judgment infinite credit. She desires to recognise in the most public manner the remarkable part played in the South African war by her Irish soldiers. That this is the interpretation to be put upon her courageous departure is proved by the following special Army Order, which was issued on Wednesday almost simultaneously with the publication of the news of her impending stay in Dublin:—

*Gallantry of Irish Regiments in South Africa—Distinction to be worn on St. Patrick's Day.*

Her Majesty the Queen is pleased to order that in future upon St. Patrick's Day all ranks in Her Majesty's Irish regiments shall wear, as a distinction, a sprig of shamrock in their headdress to commemorate the gallantry of her Irish soldiers during the recent battles in South Africa.

Her Majesty by this Order, as well as by her desire to sojourn among her Irish people, pays particular and delicate attention to the national susceptibilities of a proud race, who have had in the past distinctly just causes of complaint against the Crown, and many of whom consider that these causes are still in existence. Her subjects in every part of her realms will see with pleasure in the visit to Dublin more evidence of the Queen's motherly tact—another proof of her promptitude to respond in the fittest and fullest manner to her generous instincts. We may feel sure that in Ireland men of every rank, class, and religion alike will make their Queen royally welcome, for they all share

with her her admiration of the Irish soldier. The courage and devotion of Her Majesty to the best interests of her subjects is displayed in a marked manner by the project before her, for at her advanced age the strain upon her physical resources of such a journey, undertaken under such emotional circumstances, must be very severe. It is stipulated, we understand, that the visit, which is to last a fortnight, is to be a very quiet one, and we may be certain that all possible precautions will be taken to spare her from fatigue.

## THE NATIONAL DRINK BILL FOR 1899.

THE increase in the consumption of drink still goes on. Dr. Dawson Burns's annual letter setting forth the facts appeared in the *Times* of Feb. 27th. It excites little attention and is the subject of little comment. But the facts are amongst the most significant, not to say appalling, of any in a sociological and medical sense. One day when the exceptional excitement of the war is over they may receive the attention that they deserve. The cost of our alcoholic drinks in 1899 was £162,163,474, as compared with £155,994,019. In other words, we spent over such things in 1899 £6,169,455 more than we did in the previous year. The particular items of increase were—on spirits, £2,842,998; on beer, £4,798,745; and on wine, £40,797. The estimated expenditure for alcohol per family of five persons for 1899 is £19 19*s.* 9½*d.*—say £20. The alcohol consumed in the several chief liquors which absorb so large a portion of the nation's income is estimated in gallons as follows: in spirit, 25,341,648; in beer, 66,313,938; in wine, 2,499,296; and in cider, &c., 750,000. The consumption of alcohol per head in the different divisions of the country is as follows: England, 2·51 gallons; Scotland, 1·84; and Ireland, 1·60.

## THE HOUSING OF THE WORKING CLASSES PROBLEM.

A WRITER in the current number of the *Contemporary Review* points out that the housing problem becomes acute about once in every decade and suggests as a reason for this periodicity that what is done at each explosion, as it were, suffices for ten years. We rather question this inference. It would seem on the whole more probable that in relation to this vast and very difficult question there is some sort of systole and diastole of the philanthropic and utilitarian spirit and that in the past at least the diastolic period has been somewhere approaching a decade. Be this as it may, there are distinct indications that another acute phase is upon us, and that when the ring of battle is over and the public have adapted themselves to the income-tax we may find a reaction in a housing of the working classes atmosphere. The Bill to amend Part III. of the Housing of the Working Classes Act, 1890, which has been introduced by the President of the Local Government Board, is in itself a sure and certain sign that the matter presses, and the Bill introduced by Mr. Steadman and Mr. John Burns shows us whither perchance we may be tending. In certain particulars Mr. Chaplin and Mr. Burns see almost eye to eye. The one proposes that for the purposes of Part III. of the 1890 Act a local authority may establish or acquire lodging-houses for the working classes outside its own area, the other that a local authority may acquire land outside its own area. Mr. Burns, however, goes many steps further. He proposes that for the purposes of Part III. a local authority may after six months' notice acquire compulsorily land at any price representing 25 years' purchase, based on the annual value assessed for taxation. Money, too, is to be forthcoming upon easy terms, and the Public Works Loans Commissioners are to grant loans which are to bear interest at a rate *not exceeding 2 per cent.*, the repayment of such loan to extend over a period of *100 years*. To prevent anything approaching an undue return on money laid out there is to be created in the district of every local authority a "fair rent court" which is to consist of three members, and in London there are to be six such courts. Of these three members one is to be elected by the local trades council consisting of working trades unionists, another by the local chamber of commerce, and the third is to be nominated by the two members above referred to or, if they disagree, by the Board of Trade. This "court" in estimating a fair rent shall, "after allowing for average expenses of repair and management, allow not more than a clear profit of 3 per cent. per annum on the original outlay." The promoters of the Bill propose, too, that in any scheme under the 1890 Act the space to be provided for each adult shall be not less than 600 cubic feet, the same allowance to be provided in all common lodging-houses. This last provision shows a wholesome tendency.

## INCREASING PREVALENCE OF CANCER IN THE UNITED STATES.

DR. G. BETTON MASSEY of Philadelphia has published a valuable critical and statistical article illustrated with many charts and devoted to the above subject.[1] According to several writers an increase in the prevalence of cancerous affections is shown by mortality statistics of the past 30 or 40 years. Concerning the prevalence of cancer it may be noted that it is said to be extremely rare in such countries as Arabia, East Central Africa, Iceland, Jamaica, Mauritius, and Persia.[2] The testimony as regards civilised countries is both ample and startling. The figures given by the Registrar-General's Report for England and Wales during 31 years[3] shows that there has been an increase from 38·5 persons dying from cancer in 100,000 living population in 1864 to 75·5 dying from cancer in 100,000 living in 1895—in other words, the ratio of the mortality from cancer has almost exactly doubled in England and Wales during the 31 years preceding 1895. According to figures collected and published by Dr. Herbert Snow[4] a corresponding increase may be asserted for Scotland and Ireland. The condition of affairs is also serious in America, and in a recent paper Dr. Roswell Park[5] has ventured the prediction that "if the present rate of increase of cancer in New York State continues during the next ten years its mortality will become greater than that of consumption, typhoid fever, and smallpox combined." The objections put forward by some writers that the population of great cities is a shifting and changeable quantity which vitiates statistical records is shown by Dr. Massey to be inadequate. For, assuming the reasonable accuracy of the decennial census returns, it may be further pointed out that the statistics are gathered from a large number of American cities in which the registration of the causes of death has been obligatory for many years; that the populations of these cities are, it is true, estimated; but that these estimates have been frequently checked by municipal enumerations. As no deceased person can be buried in these cities without certification and registration it is evident that the total deaths from cancer in the statistical tables furnished for each year have but one source of inaccuracy and that is a mistaken diagnosis on the part of the attending physician, but this source of inaccuracy must be small indeed. When the number of deaths from cancer in each of these cities for a period of years is reduced to the ratio per 100,000 of population and the ratios are represented on

[1] American Journal of the Medical Sciences, February, 1900.
[2] Davidson's Geographical Pathology, 1893.
[3] Vide Chart IX. in the Report for 1899.
[4] Cancerous and other Tumours, London, 1899.
[5] Medical News, April, 1899, p. 385.

graphic charts a glance shows that there is a gradual and sustained increase in the proportion of deaths from cancer. It may be added that Dr. Massey's figures represent *the first compilation made from the registration returns* of the cities mentioned below, and that they are official, having been prepared for him by the statistical officers of the departments of health of each city. These cities include San Francisco, Boston, Chicago, Brooklyn, New York City, Philadelphia, New Orleans, St. Louis, and Baltimore. It appears from these tables that the greatest increase has occurred in the city of San Francisco, where the ratio has crept up from 16·5 cases in 100,000 of population in 1866, to 103·6 per 100,000 in 1898. "This enormous increase of more than six times as many cases in 32 years is deserving of special attention." The city of Boston shows the next most considerable increase, the ratio of cancer mortality having trebled in the 24 years between 1863 and 1887. After the latter date there was a temporary decrease, followed by a tendency to increase to the present time. In Chart VIII. Dr. Massey has combined the figures representing the cancer mortalities of the seven largest American cities, exclusive of Chicago, the records of which city were probably considered by its officials of too recent date to be valuable in this connexion. The 28 years from 1870 to 1898 have been included in this chart which must therefore be a reasonably accurate record of the cancer death-rate under modern conditions of diagnosis. The chart shows that in these seven great American cities, with a combined population of 8,207,464 in 1870, the ratio of deaths from cancer was 35·4 per 100,000 living persons. In 1898 the population of the same cities was 17,035,235, and the ratio of deaths from cancer was 66·4 per 100,000 living persons, showing that the ratio of mortality from cancer in these cities had almost doubled itself in the comparatively short time of 28 years. Dr. Massey carries on the curve of mortality into the future by the method of extrapolation[6] and concludes that "if the same mean rate of increase is maintained until the year 1910 there will be an average of 80 deaths in each city in that year to 100,000 living persons." From a careful consideration of the prevalence of cancer among the urban and rural populations it is shown that there must be at the present date about 100,000 victims of cancer in the United States. And this great army of sufferers is by no means made up of the aged and infirm. "The greater number of victims are attacked in the prime of life and while in the possession of vigorous bodily powers—some indeed, even in youth." Dr. Massey dwells on the need for further investigation and research into the causation and the mode of propagation of cancer, and he points out that there is at present but one State laboratory of research and one special cancer hospital, and that means and appliances should be extended for the study of the disease and for combating its present serious increase in the United States of America.

## THE METEOROLOGY OF BEN NEVIS.

BEN NEVIS being the highest peak in the British Isles the observations taken at the observatory on its summit (4407 feet above the sea-level) present some peculiarities not found in those taken at ordinary altitudes. When the published observations, which began to appear in 1884, had been brought down to 1897 it occurred to Mr. J. Y. Buchanan that it might be useful to study the meteorological phenomena observed during clear weather on the one hand and during fog on the other. He has now completed this task and his paper on the subject is printed in Vol. xxxix. of the Transactions of the Royal Society of Edinburgh. A separate reprint, consisting of 42 pages of letterpress and eight plates of graphic curves, is published by Messrs. Robert Grant and Son in Edinburgh and by Messrs. Williams and Norgate in London. The period covered by Mr. Buchanan's paper is from Jan. 1st, 1885, to Dec. 31st, 1897, and it was a task of great labour to sort these 13 years into periods of clear and of foggy weather, leaving out all days of mixed weather. The results with regard to rainfall, barometric pressure, tension of aqueous vapour, and temperature were as follows. In continuous clear weather it practically never rains on the mountain at all. In continuous foggy weather, on the other hand, the average daily rainfall is almost exactly one inch. There is a large and continuous excess of barometric pressure in clear weather over that in foggy weather. In foggy weather the vapour tension is that of saturation at the temperature of the air and the variations are slight. In clear weather the variations are considerable. The mean temperature of the year is 3·57° F. higher in clear weather than in foggy weather. The fog which characterises the climate of the mountain is nothing but cloud under another name. The observatory of Ben Nevis, in fact, furnishes a record of the meteorology of the clouds and in this respect it is unique.

## THE INEBRIATE AND THE CERTIFIED REFORMATORY.

COMMENTING more than a year ago[1] on the Inebriates Act of 1898, we pointed out the difficulty that might arise in the practical application of it, not from any failure of judges or magistrates to appreciate the new powers given to them but from the lack of reformatories, the institution of which the Act seemed to regard as assured. When we wrote the Home Secretary had intimated that the immediate provision of a State inebriate reformatory was not to be expected, but even if one had been prepared before the Act came into force it would only have accommodated a small number of those to whom the new law applied. The habitual drunkard convicted on indictment of a serious offence was to be committed to the State reformatory or to the certified inebriate reformatory willing to take him in, while the drunkard convicted four times within 12 months of certain scheduled offences, such as being found drunk in a highway, had only the certified inebriate reformatory open to him, subject to the same proviso that the managers should be willing to receive him. In considering the matter with the section before us which enables, but does not compel, county councils and similar bodies to contribute to or maintain reformatories or to defray the expenses of detention of any person in such an institution, we perhaps needlessly hesitated to express in plain terms what we intended to suggest—that to leave to public or private benevolence the building and organising of these institutions was to invite delay in putting into force an experimental Act which was capable of doing a considerable amount of good and of preventing the recurrence of charges in our police-courts in the manner associated with the name of the late Jane Cakebread. We, however, said: "Obviously those reformatories which county and borough councils institute will only be willing to receive inmates from contributing districts, while private ones may be far to seek; and, again, public bodies may wait to take steps until the resources of private benevolence within their jurisdiction or within easy reach of it have been exhausted." The state of things which has, in fact, arisen is shown by what passed at the hearing of a charge of drunkenness the other day by Mr. Fordham, a London magistrate. The prisoner had been remanded in order that it might be ascertained whether there was any institution to which she could

[6] To extrapolate is "to obtain by extending a series of numbers by an empirical law deduced from the observed law of progression of the numbers."

[1] THE LANCET, Feb. 11th, 1899, p. 392.

be sent, and the court missionary, who had corresponded with the Government inspector under the Act, had received from him the following reply: "I am afraid I cannot help you. I am at my wits' end to answer half the queries from London police-courts just now. Duxhurst is, I believe, full. Ashford being Roman Catholic is out of it, and Bristol won't take London cases into either of their reformatories. The London County Council's own place will not be ready till April. Until that time I fear it means a block. Can you not address the same question to the clerk of the Inebriates Committee of the London County Council? It might spur them up." In explanation of the attitude of the Bristol reformatories towards London inebriates the warden of the Royal Victoria Homes at Brentry, near Bristol, writing to the *Pall Mall Gazette*, has since stated that the accommodation in his homes is ample "if only the London County Council saw its way to do as other county and borough councils in England have done—e.g., contribute as the Act provides." We take this to mean that the London County Council has refused to pay for London patients being treated at Brentry, as it would hardly be expected to contribute in the ordinary sense while it was itself about shortly to open a reformatory of its own. Whatever the cause of this attitude of the London County Council may be its result is deplorable, if it is anything like that which is stated in the letter of the Government inspector, a gentleman not likely to exaggerate. Apart from the desirability of applying without delay the remedy provided, the County Council could only have gained by experience in watching the treatment of its inebriates in the Victoria Homes or any other homes in which it might have been able to come to terms with the management. We wish every success to the Council's home, which, it is said, will be opened in April, but if London, which should lead the kingdom in such matters, is so tardy what can be expected of other districts? Perhaps in due course and after experiment local bodies will be compelled to provide for their inebriates instead of being merely permitted to do so. At present, as far as we can see, they can either refuse to take any steps at all with regard to them, or if they do so by building a home at the expense of their locality, the managers can still at their discretion refuse to receive the inebriate who in the view of a magistrate within the district is a proper inmate for their reformatory.

## THE COLLEGE HOSPITAL, PIETERMARITZBURG.

IN the *Times of Natal* of Feb. 9th, 1900, appears a correspondence between Major H. Heath, Assistant-Adjutant-General, Lines of Communication, and the editor of the *Times of Natal*, Mr. C. H. Lepper. There is also a copy of a report signed by Sir William Stokes who inspected the above hospital on Feb. 5th in consequence of certain statements made in the *Times of Natal* on Feb. 3rd in reference to the condition of the management of the hospital and the treatment of the wounded therein. It appears that a member of the staff of the *Times of Natal*, Mr. Harrison, went to the hospital on Feb. 2nd and on Feb. 3rd there was published in the paper an account either written by him or founded upon information supplied by him. The article was, according to Major Heath, headed "Serious Complaints by the Wounded; Wounds Undressed since Spion Kop." This battle, it will be remembered, was fought on Jan. 24th. Therefore the allegation was that the wounded had been practically left with their wounds undressed for a space of 10 days. Sir William Stokes in his report states that he found on inquiry that every man wounded at Spion Kop allowed that his wounds had been attended to at the various hospitals on the way down from the front and that they were also attended to on arrival at the College Hospital either on the same night or next morning. Confronted with this statement the editor wrote to Major Heath saying that he was prepared to publish a statement to the effect that "we desire to make plain that the non-dressing of wounds mentioned (in the article of Feb. 3rd) referred solely to absence of treatment after arrival at the hospital." Mr. Harrison, the member of the staff of the *Times of Natal* mentioned above, made the following statement about three cases: (1) That a man wounded in the cheek and leg had never been dressed since he left the battlefield; (2) that a man with an injured eye could get no lotion; and (3) that a man who had been shot through the thighs had had no sleep for six nights and had had no attention beyond the placing of a plaster over the wounds and a pillow under his knees. At the official inquiry, at which the Commandant of Pietermaritzburg, Lieutenant-Colonel Johnston (principal medical officer), Sir William Stokes, and Mr. Harrison were present the first man said that he was examined on the field, dressed at Mooi river, and passed by the medical officer on arrival at the hospital. The second patient, the man with the injured eye, stated that his wound had not been attended to at the hospital up to Feb. 2nd. This statement is made by the editor in an "appendix" to his letter of Feb. 8th. Mr. F. W. Gray, however, who accompanied Mr. Harrison, gives a different version in a sworn declaration. He there says that the medical officer saw the second patient and ordered lotion, but there was none in the hospital, so a bandage was applied. Sir William Stokes reported that atropin drops were ordered and supplied. The third patient, the man who was shot in the thighs, denied Mr. Harrison's statements point blank. The editor finally maintains that he is quite content to leave the matter to the judgment of the public. We think it is about the best thing he can do. But the honest course would be to allow that, to put it mildly, he and Mr. Harrison had made a mistake.

## PULSATING EMPYEMA.

IN the February number of the *Albany Medical Annals* Dr. J. L. Archambault has published a case of this rare affection, of which, in 1889, Osler could collect only 42 cases. The most complete study of the subject is Comby's, which appeared in 1891 in the *Archives de Médecine*. On this the following description is largely based. Under the term pulsating empyema two different conditions are included. In one the pulsations cover a wide area of the thorax; in the other they are confined to a fluctuating tumour which communicates with the effusion. The pulsating tumour is not always single, there may be two. Its most usual position is between the second and sixth ribs in front, outside the mamma, but the pulsating area may, as in Dr. Archambault's case, be in the lower axillary region. It may also be distant from the thorax; a case is reported where it was in the lumbar region. Pulsating empyemata are almost always left-sided. The recognition of the pulsation is important, for it shows that the effusion is purulent. Pulsating empyema has often been mistaken for aneurysm—an error which leads to the delay of necessary intervention. The presence of a large effusion, the situation of the pulsation, and the absence of a murmur, thrill, or pressure symptoms, differentiate the condition from aneurysm. Again, a pulsating abscess in the præcordia may be confounded with pulsating empyema. For example, a girl, aged four years, had for several months pain in the region of the heart. A tumour appeared in the præcordia and increased rapidly. It showed pulsation synchronous with the pulse and was slightly reducible. The overlying skin was red, tense, thin, and hot. There were no signs of pleural effusion and no cardiac murmurs. Puncture gave exit to pus. On incision a perforation was found at the

junction of the sixth costal cartilage and rib, making a communication between the superficial abscess and another beneath the thoracic wall. The rib was denuded. There were evidently costal periostitis and "shirt-stud" abscess. The posterior pocket must have been in contact with the pericardium. Sinuses persisted for about three months, but finally cicatrisation took place. In pulsating empyema if the pleural cavity be emptied by aspiration pneumothorax usually results, for the atelectasis of the lung is such that it cannot dilate to fill the vacuum. The heart is deviated to the right and fixed there by adhesions. Pulsating empyema is essentially chronic and if left to itself is usually fatal. Dr. Archambault relates the following case. A boy, aged six years, had scarlet fever in April, 1893. During the last stage of the fever cough appeared; after recovery it persisted and grew worse, and pain in the side and dyspnœa occurred at times. Advice was therefore sought in August. The skin was almost livid and the dyspnœa was intense. A pulsating, soft, and fluctuating tumour of the size of the palm was situated over the left seventh, eighth, and ninth ribs, about midway between the axillary and scapular lines. There were signs of a large left pleural effusion. Dulness extended anteriorly nearly to the clavicle, below which there was Skodaic resonance. The apex beat was to the right of the sternum. Aspiration at the angle of the scapula showed the presence of pus. An operation differing from that for ordinary empyema only in that the incision was made in the centre of the fluctuating area, penetrating the pleura between the eighth and ninth ribs, was performed. Progress was satisfactory and a month after operation the pleural cavity had contracted so that it admitted only one-fourth of the quantity of liquid which had been used for irrigation. The heart had moved half way towards its normal position, the side was slightly depressed and flattened, and some respiration was present. In 1899, when the child was 12 years old, the chest was symmetrical and expanded well; no abnormal signs were present. The heart was hypertrophied from valvular disease and the apex beat was outside the nipple line. This case is important because it is opposed to the teaching of Comby that in pulsating empyema the lung is permanently contracted.

## MEMORIAL TO THE LATE MISS MABEL ELIZABETH WEBB, M.B. LOND.

AFTER the annual meeting of the Governors of the Royal Free Hospital on Feb. 28th, the new museum and laboratories recently added for the benefit of the Medical School attached to the hospital were formally opened by Lady Reay, C.I. This addition has been made as a memorial of the late Miss Mabel Webb, who was curator of the museum and assistant pathologist to the hospital until her sudden death on Oct. 28th, 1898. She had been curator of the museum for two years and realising how much pathological work was hindered at the hospital from want of space she had originated and designed the extension of building which has now been completed to perpetuate her memory. The influence of Miss Webb's fine character and personal charm upon all with whom she came in contact was such that before definite arrangements for a memorial had been made the students who worked under her had spontaneously raised a fund of money for such a purpose. The medical staff of the Royal Free Hospital and its lay governors were no less impressed by their late curator's service to the hospital and good influence generally, and thus from the willing subscriptions, of colleagues, students, and friends, bountifully supplemented by the generosity of Miss Webb's mother, a memorial of the most appropriate kind has been raised to her memory. The new floor contains a museum with shelves for 6000 specimens, a laboratory for the use of the curator and medical staff, and an assistant's room. The room below, which in Miss Webb's day had to answer all these purposes and also accommodated the curator's classes, is now devoted entirely to the last purpose. A bronze memorial tablet which is to be placed in the museum bears the following inscription: "This building was enlarged by the family and friends of Mabel Webb, M.B. Lond., Curator to the Museum of this Hospital from 1896 to 1898, to honour her memory and to carry out a scheme originated by her for the improvement of the Pathological Department. Through devotion to duty and pursuit of high ideals of work and conduct her term of service here was in an unusual degree fruitful of good. *Beati mundi corde: quoniam ipsi Deum videbunt.*"

## METROPOLITAN BRANCH OF THE BRITISH DENTAL ASSOCIATION.

THE annual dinner of this association was held at the Hotel Cecil on March 3rd, the President, Mr. Ashley W. Barrett, M.B. Lond., M.R.C.S., L.D.S. Eng., being in the chair. The attendance was large and included many guests. The loyalty of the audience found felicitous expression in the President's speech and in the National Anthem, which was twice sung. The President also proposed "The Association and the Metropolitan Branch." The branch is in a prosperous state and seems to be very efficient for the promotion of harmony and coöperation. A very pleasing part of the entertainment was furnished by the songs by Mr. J. Clulow and Mr. R. H. Manning, and the recitations by Mr. Percival Reed, which were nearly all encored. Dr. Glover, in responding for the guests, touched on the wonderful development of dentistry as a profession since the Act of 1878; and by way of illustration alluded to the fact that the Government had sent out Mr. Newland Pedley and a staff of dentists to help to complete the arrangements for the medical comfort of our brave soldiers—a refinement of care which distinguished the present from all previous wars.

## BERI-BERI IN THE STRAITS SETTLEMENTS.

IN his annual report on the Straits Settlements civil hospitals for the year 1898 Dr. Max. F. Simon, the principal civil medical officer, says that the estimated population of the whole of the Straits Settlements for that year was 592,587, as compared with an estimated population of 580,563 for 1897. The number of births that were registered in 1898 was 12,781 and the number of deaths registered was 18,032, giving birth- and death-rates per 1000 of population of 21·57 and 30·43 respectively. The colony was very free from epidemic disease during the year. Only nine deaths from cholera were registered in Singapore and 39 in Penang; no cases occurred in Province Wellesley or Malacca. The deaths from small-pox were 46 in Singapore, two in Penang, one in Province Wellesley, and 23 in Malacca. There were considerably fewer cases of beri-beri admitted into all the hospitals of the colony during 1898 than during 1897, the admissions numbering 1329 as against 2095. The disease also appears to have been slightly less fatal, 420 deaths having occurred (a percentage on admissions of 31·6) in 1898, as against 692 (a percentage on admissions of 33·28) in 1897. The death-rate from this disease was, as usual, higher in Singapore than in any of the other settlements. There appear to be upwards of 16 hospitals in the colony, and the whole number of admissions to them for 1898 was 23,662 with 3296 deaths. The diseases which caused the greatest number of admissions to hospital were as follows: dysentery, 875 admissions, 369 deaths; malarial fever and cachexia, 2174 admissions, 158 deaths; beri-beri, 1329 admissions, 420 deaths; venereal diseases, 2594 admissions, 121 deaths; rheumatism (acute and chronic) 1438 admissions, three deaths; diseases of the digestive

system (including diarrhœa), 1938 admissions, 585 deaths; and diseases of the skin, 4058 admissions. In Tan Tock Seng's hospital for paupers in Singapore the number of cases of beri-beri occurring among patients who have been admitted for other diseases has attracted the attention of the Government. In his report on the lunatic asylum Dr. W. G. Ellis, the medical superintendent, states that beri-beri has been even more prevalent than in 1896 and 1897, and unless the better ventilation of the lower levels and the use of a small hospital to be built on the sea coast prove more satisfactory than former attempted remedies the question of removing the whole asylum to some other site must be considered. In 1896, with an average daily number of 233 patients, there were 85 deaths, 40 of which were from beri-beri; in 1897, with an average daily number of 228, there were 31 deaths, of which 48 were from beri-beri; and in 1898, with an average daily number of 208, there were 95 deaths, of which 55 were from beri-beri Seven attendants suffered from the disease and two of them had to leave the service on account of persistently recurring attacks; the other five made good recoveries. With respect to Singapore Prison Dr. J. Leask, the surgeon in charge, mentions that for a period of 12 years—namely, from 1885 to 1897—only two patients were treated for beri-beri, one of whom was suffering from it at the time of admission. In November and December, 1897, three cases occurred, and in 1898 there were 124 cases, of which 14 appeared from the beginning of January to the end of September, 10 in October, 78 in November, and 22 in December. Only one death was due to this cause in 1898. Strychnine in large doses was the principal treatment, commencing with five-minim doses and rapidly increased to 15 minims every four hours. In no case was the physiological action of the drug observed. Digitalis was given in all cases. Diuretics and purgatives were largely used, elaterium being found the most satisfactory of the latter. For dyspnœa solution of nitro-glycerine in frequently repeated doses acted admirably.

## A GOOD RECORD IN OPERATIONS FOR CATARACT.

DR. SAMUEL THEOBALD of Baltimore has recently published in the form of a pamphlet a report on 100 consecutive cases of cataract extraction. They were certainly not selected cases, since they include two eyes on which iridectomy had been previously performed for glaucoma, two in which the lens was dislocated through injury, one of high myopia, and various cases affected with choroiditis. The section was in all instances made at the sclero-corneal junction, and in many instances a small conjunctival flap was made. In the majority of instances the extraction was combined with iridectomy, either performed at the time or effected by a preliminary operation. Still a considerable number of cases, 19 in all, were done without iridectomy. Cocaine was used as an anæsthetic in 89 cases, chloroform was administered in six, and no anæsthetic was given in the rest. Careful antisepsis was practised. In the after-treatment no bandage was applied, but the eyes were closed with strips of isinglass, or in restless patients a pad of cotton-wool was placed over each eye and retained by similar strips. The patient was kept in the bed where he was operated upon for three days, after which the dressings were changed and a daily instillation of a solution containing four grains of atropia and ten grains of boric acid to the ounce of water was applied. As a matter of routine 20 grains of sulphonal or trional were given to the patient on the evening of the operation. The results are such as Dr. Theobald may congratulate himself upon having obtained, and are better than he could have anticipated considering that the cases were consecutive and not selected. He counts vision $\frac{20}{200}$ to $\frac{1}{200}$ as successes, and of these to have had about 90 per cent.—a very satisfactory number. There were two losses from suppuration. The other failures were from collapse of the globe consequent on loss of fluid vitreous, detachment of retina, and choroido-retinal changes. No losses occurred amongst those in whom the simple operation was performed.

## CHELSEA CLINICAL SOCIETY.

TWO special meetings of this society will be held in the Holy Trinity Parish-hall, Pavilion-road, Sloane-square, S.W., on Tuesday, March 13th, and Tuesday, March 20th, at 8.30 P.M. At these meetings the annual clinical debate will be held and the chosen subject this year is the Treatment of Rheumatism, with special reference to Prophylaxis and Cardiac Complications. The debate will be opened on March 13th by Dr. William Ewart and the following among other speakers are announced to take part in the discussion: Dr. T. J. Maclagan, Dr. A. E. Sansom, Dr. Donald Hood, Dr. David B. Lees, Dr. Archibald Garrod, Dr. Pye-Smith, Dr. R. Caton, Dr. Burney Yeo, and Dr. Isambard Owen. Sir Richard Douglas Powell, Bart., will give a closing address on March 20th. The meetings will be open to all members of the medical profession on presenting their cards. The special subject for debate is to be considered under the following aspects. On March 13th: (1) the general factors bearing upon the Prophylaxis of Rheumatism: the need for organised investigation; (2) the general, medicinal, and dietetic treatment of the acute attack and of the rheumatic tendency; and (3) the relative anti-rheumatic value of various drugs and modes of treatment. On March 20th: (1) the Special Prophylaxis against the occurrence or aggravation of Rheumatic Valvulitis: can valvulitis be prevented or cured at its early stage? (2) the methods which have been advocated for the prevention or cure of the valvular affection; (3) the alkaline treatment and its varieties and the salicylic treatment and its varieties: should they be combined? and (4) the unfulfilled indications and requirements.

## PLAGUE IN THE ARGENTINE REPUBLIC.

ON Jan. 26th the existence of bubonic plague in the city of Rosario was officially declared by Government decree and on the following day the city was completely isolated from the rest of the country, all railway and river traffic being suspended. Troops of the line formed a cordon by land and torpedo destroyers and gun-boats guarded the river, which is many miles broad. The authorities hope that this complete investment by sea and land will prevent the escape of those infected by the terrible bacillus, which is, however, reported to be already in Buenos Ayres, the capital of the republic. The existence of plague in Rosario has been suspected for some time and bacteriological investigations have been carefully carried out, but the Government hesitated to declare the fact officially—a policy which was a source of embarrassment to foreign ministers and consuls, who could not obtain from the Argentine Government the corroboration requested by their respective governments. Rosario is a large city of 100,000 inhabitants, and as a port it comes next in rank to Buenos Ayres. It is the outlet for the great grain region of Santa Fé and every year sends to Europe over 1,000,000 tons of wheat, maize, and linseed, as well as thousands of tons of wool. It is also a port of call for all vessels going to, and returning from, Paraguay, where bubonic plague has been present for some months past but not actually in epidemic form. In fact, nowhere along the South American coast has the plague taken a strong hold, a few isolated cases at Rio Janeiro, Santos, São Paulo, and Asunción (Paraguay) being the record up till

now. This outbreak in Rosario is limited to some wharves along the river side where hundreds of thousands of bags of wheat and maize are stored, and measures have already been taken to isolate this produce and the workmen, 280 in number. Both Rosario and Buenos Ayres are well able to deal with the plague or any other epidemic. They have a constant and abundant water-supply, are well drained, and there are no slums, such as are in New York, Glasgow, or London. The municipality of Rosario has taken some practical measures. Free baths have been opened, and all dustmen, sewage-men, and scavengers in municipal employ are obliged to have baths on finishing their day's work. The ordinary house refuse is to be removed by the dustman twice a day in the poorer neighbourhoods (being the height of summer the average temperature is 90° F. in the shade). Daily inspection of the common and larger lodging-houses is being carried out; and last, but certainly not least, the immense ponds of stagnant water which still exist as a danger and eyesore between the long series of docks and the streets proper of the city are to be immediately filled up—no light task, as it will require many millions of cubic feet of cinders, sand, and other materials. As will be seen from the letter of our Rome correspondent Italy is specially interested in the outbreak owing to a large percentage of the foreign residents being Italian by nationality.

## THE ANNUAL REPORT OF THE COAL-SMOKE ABATEMENT SOCIETY.

THE report of the Coal-Smoke Abatement Society for 1899 has just been issued. Although the society has been in existence for little more than a year, and owing to lack of funds can only support one inspector, yet it has achieved excellent results. Mr. Petty (the inspector) has since May, 1899, reported 1250 observations. In 680 instances official complaints have been made to the vestries which led to statutory notice being given in most cases and to legal proceedings being taken in 62 cases. In 30 of these the nuisance was entirely suppressed and in 32 cases it was much lessened. Summonses were taken out and convictions obtained in 24 cases. We are glad to see that a Smoke Amendment Bill is to be introduced by the London County Council. The report points out that the greater part of the evil—namely, the emission of smoke from the chimneys of private dwellings—remains untouched, but that a technical committee has been formed to examine and report upon the means of preventing smoke from private dwellings without extra expense for fuel. There is no doubt that the fogs of late have been much less smoky—fog in London can never be averted owing to climatic conditions—but it is possible to ensure that it shall be clear. In the last dense fog which we experienced this improvement was specially noticeable, a fact upon which we commented at the time.[1] The Coal-Smoke Abatement Society has done excellent work, and if by its efforts the magistrates can only be brought to understand, as in many instances they have been, that the plea of "No Welsh coal" is no excuse in the eye of the law, we may hope to see the atmosphere less smoky this year than even during that which is past.

## GENERAL LEONARD WOOD, GOVERNOR OF CUBA.

THE announcement that the President of the United States had appointed General Wood Governor of Cuba met with the unanimous approval of the American people. Of all the officers of the United States Army who served in the Cuban campaign no one fulfilled his military duties with greater credit than the man who before the Spanish-American war was an assistant surgeon in the regular army. It was through the influence of his friend Theodore Roosevelt, now Governor of New York State, but who at the time of the outbreak of the war with Spain was assistant secretary of the navy, that Dr. Leonard Wood was placed in command of the famous "Rough Rider" regiment. But although General Wood proved himself a good soldier it is as an organiser and sanitarian that he exhibited his genius. The condition of Santiago when he assumed command of that province could scarcely have been worse. Pestilence and famine were abroad everywhere and to the city of Santiago itself even more than to Havana might the term of "sink-hole" have been aptly applied. General Wood immediately organised and placed on a proper working footing an efficient sanitary system, at the same time insisting that his orders should be carried out to the letter. Owing to this vigilance and energy the death-rate of Santiago was decreased 75 per cent. in six months. Yellow fever, which in its season used to decimate the population and which was dreaded alike by white men and natives, was held at bay and no serious outbreak occurred. But looking after the physical welfare of the people was by no means the extent of General Wood's labours. He formed an effective police force, the members of which were chiefly recruited from the natives. He organised schools and set on foot a scheme of school inspection. Parents were compelled to keep their children clean, the latter not being allowed as in former times to roam the streets. Houses were inspected and if not found in a hygienic state were disinfected and their occupants punished. Precautions were rigidly enforced on the slightest indication of the appearance of infectious disease. In fact, every known measure calculated to render a city which was notorious for its filth and disease a healthy place of residence was thoroughly carried out. The results were, as before mentioned, almost magical and furnish yet another instance of the effects of sanitary methods carried out with a strong hand. The prediction may be safely made that General Wood will regenerate Cuba in the same manner as the British have regenerated Jamaica and that in the course of time yellow fever will be exterminated in the former island.

## THE ABATEMENT OF KAKKÉ IN THE JAPANESE NAVY.

DR. TATSUSABURO YABE, principal medical officer in the Imperial Japanese Navy, contributes a short article under the above heading to the *Archives de Médecine Navale* for January, 1900. Not long ago *kakké*, or beri-beri, was the most prevalent malady in the Japanese fleet, at times absolutely paralysing action, just as formerly scurvy used to behave in European squadrons. In 1882 during the Corean expedition, and about the same date in a fleet off the coast of South America, *kakké* placed between 30 and 40 per cent. of the total strength *hors de combat*. "At the commencement of the eighteenth century, continues Dr. Yabé, "the English Admiral Flosier (*sic*) *en route* for the East Indies at the head of seven ships of the line, had he not the pain of losing his crews twice over by scurvy, and did he not himself die broken-hearted?" Scurvy was at length mastered by means of prophylactic measures—they gave the men fruits, fresh vegetables, lime-juice, and lemonade; *kakké* was brought under control by amelioration of the rations—an innovation due to Mr. Kanébiro-Takaki. Scurvy and *kakké* resemble each other by the uncertainty in which their etiology is enveloped. They are said to be epidemic diseases, but as yet the specific microbes have not been discovered. Mr. Takaki believes that *kakké* is a disease of nutrition, and although Dr. Yabé cannot share the belief he nevertheless freely acknowledges the beneficial results that have attended on the prescriptions of

[1] THE LANCET, Oct. 28th, 1899, p. 1183.

the eminent creator and organiser of the Japanese Naval Medical Service. During the sexennial period 1878–83 the average percentage[1] of sickness from *kakké* was 32·5 and there were 246 deaths. In February, 1884, the Takaki ration was introduced, when at once the disease began to disappear from the navy. In 1885 the percentage was 0·59 and during the next eight years it averaged only 0·02. From 1885 to 1893 inclusive not a single death from *kakké* took place. In 1894, during the war with China, two fatal cases occurred, and the following year there was one, but the percentage of *kakké* sickness for the biennium was only 0·19. Dr. Yabé thinks that excessive rice-eating predisposes to *kakké*, whereas barley, and especially pearl-barley—which has long been a favourite article of food amongst the Japanese peasantry—acts as an almost never-failing prophylactic. It was while there was dearth of barley in the Chinese campaign that *kakké* committed its ravages.

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A MEETING of the Hunterian Society was held on Wednesday, Feb. 28th, at the London Institution, the new President, Dr. Dundas Grant, presiding. The second Hunterian Society's Lecture was delivered by Mr. C. Mansell Moullin. A vote of thanks to the lecturer, proposed by Mr. J. S. E. Cotman, and seconded by Dr. F. J. Smith, concluded the proceedings of the evening. We hope to publish the lectures in an early issue of THE LANCET.

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MORE replies to our circular letter to the profession concerning the Midwives Bill have come in during the week, and about half the constituency have registered their views with us. The proportion of five to one against the Bill is maintained, and the figures may be taken to represent the state of professional feelings.

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THE annual general meeting of the Medical Defence Union will be held on Tuesday, March 13th, at St. Martin's Town Hall, London, W.C., at 4 P.M. The chair will be taken by Dr. W. S. A. Griffith, the President of the Union.

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WE regret to record the death in his seventy-second year of Dr. William Marcet, F.R.S., which took place at Luxor, Egypt, on March 4th. He had been in failing health for some time.

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FORMS have been issued to be filled up by English medical men proposing to be present at the International Conference on Pulmonary Tuberculosis to be held at Naples on April 25th next.

## THE WAR IN SOUTH AFRICA.

THE news of last week, which has changed the whole aspect of the war in South Africa, was received with exultation throughout the British Empire. When we consider what Lord Roberts has gone through in his long and distinguished military career, his age, and the great sorrow that had befallen him in the loss of his son, his response to what he regarded as the call of duty was a noble display of patriotic self-sacrifice. Apart from the great military services which he has rendered in this war the judgment, tact, and urbanity which he has displayed in dealing not only with his Boer foes but with the colonial troops and all who have been brought into contact with him have been conspicuous.

As regards Ladysmith, the news of its relief was well calculated to give immense satisfaction in the state of nervous tension which had existed in the public mind from the time that we had all heard that its garrison was "very hard pressed." The topographical obstacles which had to be overcome in its relief were of the most formidable kind, in the face of which and a succession of Boer entrenchments General Buller's relieving force had repeatedly recoiled only to advance again with splendid determination and gallantry until their efforts were finally crowned with complete success. Of all this, however, there is now no need to tell. When the history of this war comes to be written the siege and relief of Ladysmith will occupy a proud place in our military history. Its relief was a most arduous undertaking and, considering the relatively small force that had to accomplish it and all the attending circumstances, the highest credit is, in the opinion of competent military judges, due to Sir Redvers Buller's military capacity, judgment and determination, in having accomplished it with a loss which, although heavy, was, all things considered, really less than might have been anticipated.

The facts connected with the siege of Ladysmith and its defence for four months under Sir George White speak for themselves. Every word of General Buller's recent general order congratulating the besieged and his own force is well merited and exactly describes the situation. No one can read the brief record of what occurred there on the eventful entry of the relieving troops without a thrill of pride and without realising the dramatic pathos of the situation. It was this that stirred the heart of all English-speaking people. The news of the successful strategy of Lord Roberts, welcome and all-important as it was, had not these elements; it did not involve the rapid transition from anxiety to joy and the commingling of happiness with grief and pitifulness. Somehow the nation, like the troops, held fast to the conviction that there was a plan of campaign existing in the military mind which had never been lost sight of but was only delayed by exceptionally untoward circumstances and would be forthcoming in due time when the military machine was in proper working order.

The garrison of Ladysmith has had a terrible experience during the siege. Their losses by fighting and bombardment have been considerable, but those resulting from enteric fever, dysentery, and other diseases have been still greater. This is not to be wondered at considering the semi-starvation, the privations, the bad water, the fouled soil, and the overcrowding that existed. The troops were in deplorable plight and bore evident marks of the physical suffering and nervous exhaustion which they had undergone. The town contained 21,000 half-starved inhabitants. Although the actual mortality remained comparatively low until the middle of January the general health of the troops suffered severely from the want of good nourishing food and of essential comforts. As many as 8424 persons passed through the hospitals and the daily average under treatment ranged from 1500 to 2000. There were 1710 cases of enteric fever alone, and 800 cases were under treatment at the time of the relief of the town. Ladysmith has never had a particularly good bill of health and sanitary reputation at the best of times and, as we took occasion to point out almost at the beginning of the war, typhoid fever and dysentery were usually prevalent there at this season and were to be expected. Under all the insanitary conditions which must have been accumulating during the siege and the desirability of removing the troops and the sick from these and the depressing conditions surrounding them, the military authorities have exercised a most wise discretion in evacuating the station as far as practicable, and this has been, and is now being, done. It is, unfortunately, unavoidable that the sick should feel the fatigue and exhaustion of this movement and its attendant discomforts under even the best arrangements; but change of site was essential under the circumstances in their interest and, still more so, in that of the healthy, in order to limit the spread of disease as far as possible. A large number of nurses will be required to attend upon the sufferers from enteric fever and other patients.

Speaking generally, the sanitary state of the army in South Africa is fairly satisfactory. The troops actually in the field look sturdy and strong and are in excellent form. There is, of course, a considerable amount of those diseases which are incidental to field service in hot weather, and notably of enteric fever, dysentery, and diarrhœa. The enteric fever rate is, as we have said, very high in the besieged garrison at Ladysmith. It is not limited to Ladysmith, however, cases having shown themselves at other stations and among different columns

[1] It is not clear whether this percentage refers to strength or to total sick from all causes, but probably the latter is the case.

operating in the field. Cases of dysentery also are of frequent occurrence. Hitherto the rapid succession and severity of the fights have occasioned a disproportionate number of surgical cases, but we are afraid that we must expect a progressive increase of sickness as the campaign goes on. Pneumonia and respiratory affections occasionally appear among soldiers from shipboard. The Government has provided for the requirements of the army in South Africa on a liberal scale and with much care and foresight and has thereby prevented a great deal of disease and suffering. The Army Service Corps has proved very efficient and has rendered conspicuous services to the troops. In all these respects, and especially considering the very severe fighting and the arduous nature of the campaign, there is every reason to feel satisfied, especially when the sanitary and medical arrangements of the present war are compared with those of the French expeditions in Madagascar and Tonquin, for example, or with those of the campaign in Cuba.

In congratulating Lord Roberts on the brilliant success which he has so far achieved we do not forget that as medical journalists it is especially gratifying to us to do so, seeing that medical officers have invariably met with considerate appreciation and fair treatment at his hands during the course of his long and distinguished service. It must have been extremely gratifying to the Queen to have received his lordship's telegram just as Her Majesty was leaving Windsor for Netley and to be the bearer of its good news to her wounded soldiers, in whose welfare and comfort Her Majesty has always taken a very keen and sympathetic interest.

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FIELD FORCE.—SERVICE ABROAD, SOUTH AFRICA.

*Table showing Personnel of Medical Units on the Lines of Communication.*

| Unit and place of mobilisation. | Names. | Remarks. |
|---|---|---|
| No. 9 General Hospital (Woolwich). | *Royal Army Medical Corps.*<br>Lieutenant-Colonel F. E. Barrow, R.P. (*a*).<br>Major A. Hosie (*b*).<br>,, M. T. Yarr.<br>Captain F. Smith.<br>Quartermaster Hon. Lieutenant E. P. Offord.<br>*Volunteer Medical Staff Corps.*<br>Surgeon-Lieutenant J. W. Smith.<br>,, ,, E. W. Herrington.<br>*Civil Surgeons.*<br>Mr. J. L. Brownridge (*c*).<br>,, H. A. Bryant.<br>,, J. M. Crawford.<br>,, C. W. Donald (*c*).<br>,, H. N. Goode.<br>,, J. Hunter.<br>,, W. C. Mayo.<br>,, T. Milton.<br>,, H. E. Pace.<br>,, A. B. Smallman.<br>,, E. Turton (*c*).<br>,, W. Wright.<br>*Army Nursing Service.*<br>Superintendent—Miss S. E. Webb.<br>*Army Nursing Service Reserve.*<br>Nursing Sister Miss E. McC. Anderson.<br>,, ,, ,, G. Beesley.<br>,, ,, ,, J. M. Clay.<br>,, ,, ,, E. A. Deacon.<br>,, ,, ,, E. G. Eastmead.<br>,, ,, ,, E. M. Edwards.<br>,, ,, ,, A. M. Ferguson.<br>,, ,, ,, R. Griffiths.<br>,, ,, ,, E. M. B. Hall.<br>,, ,, ,, M. Hilson.<br>,, ,, ,, B. M. Hoare.<br>,, ,, ,, M. N. Jephson.<br>,, ,, ,, B. J. Jones.<br>,, ,, ,, E. M. Pethick.<br>,, ,, ,, S. F. Pollard.<br>,, ,, ,, E. J. Stonehouse.<br>,, ,, ,, N. C. P. Tabuteau.<br>,, ,, ,, M. E. Tippetts.<br>,, ,, ,, A. M. Winder.<br>(Three female servants.) | 134 non-commissioned officers and men (including 50 of the St. John Ambulance Brigade), one special cook.<br>The two warrant officers will join the unit on its arrival in South Africa. |

(*a*) Officer in charge. (*b*) Secretary and registrar. (*c*) Has knowledge of x ray work.

Medical Division, War Office, Feb. 20th, 1900.

*Table showing Personnel of Medical Units on the Lines of Communication.*

| Unit and place of mobilisation. | Name. | Remarks. |
|---|---|---|
| No. 10 General Hospital (Depot R.A.M.C., Aldershot). | Surgeon-Lieutenant-Colonel W. W. Lake, M.M.S.C. (*a*)<br>*Royal Army Medical Corps.*<br>Major R. H. Clement.<br>,, E. C. Freeman (*b*).<br>Lieutenant H. B. G. Walton, Quartermaster and Honorary Lieutenant (*c*).<br>*Militia Medical Staff Corps.*<br>Surgeon-Captain W. K. Steele.<br>*Volunteer Regimental Medical Officers.*<br>Surgeon-Captain C. A. MacMunn, 3rd V.B. South Staffordshire Regiment.<br>Surgeon-Captain A. A. Watson, 2nd V.B. East Lancashire Regiment.<br>Surgeon-Captain J. K. Butter, 2nd V.B. South Staffordshire Regiment.<br>*Civil Surgeons.*<br>Mr. D. V. M. Adams.<br>,, L. B. Betts.<br>,, A. Copland.<br>,, R. Corfe.<br>,, G. Grace.<br>,, H. H. G. Knapp.<br>,, W. H. May.<br>,, J. G. Parker.<br>,, M. W. Renton.<br>,, J. H. Sheldon.<br>*Army Nursing Service Reserve* (*a*).<br>Nursing Sister Miss L. Ainsworth.<br>,, ,, ,, N. V. Blythe.<br>,, ,, ,, F. L. Carey.<br>,, ,, ,, I. E. Church.<br>,, ,, ,, S. Clark.<br>,, ,, ,, L. M. Green.<br>,, ,, ,, R. A. Humphrey.<br>,, ,, ,, A. M. Joscelyne.<br>,, ,, ,, M. W. B. Kendall.<br>,, ,, ,, M. Lippiatt.<br>,, ,, ,, M. L. MacAdam.<br>,, ,, ,, M. McLeod.<br>,, ,, ,, M. Pedlar.<br>,, ,, ,, A. I. Richardson.<br>,, ,, ,, L. Shepherd.<br>,, ,, ,, E. C. Stuart-Jones.<br>,, ,, ,, B. Turner.<br>,, ,, ,, L. Warriner.<br>,, ,, ,, F. M. Wilkinson.<br>,, ,, ,, A. B. Wohlmann.<br>(Three female servants.) | Two warrant officers (one to join the unit on its arrival in South Africa), 133 non-commissioned officers and men (including 50 men St. John Ambulance Brigade), one special cook.<br>Arrangements for charge of x ray apparatus to be made in South Africa. |

(*a*) Officer in charge. (*b*) Secretary and registrar. (*c*) Will join the unit on its arrival in South Africa. (*d*) Superintendent or acting superintendent to be selected from Army Nursing Service in South Africa and extra nursing sister being included in this detail to allow of the adjustment.

Medical Division, War Office, March 7th, 1900.

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## STATISTICAL METHODS AND THE INDIAN PLAGUE COMMISSION.

AT the close of our notice in THE LANCET of Feb. 24th of the report of the Indian Plague Commission upon Haffkine's Plague Prophylactic we expressed our intention of returning again to a brief discussion of the statistical methods adopted by the Commissioners and by Mr. Haffkine respectively. The method hitherto followed by the latter to express in percentages the reduction in mortality brought about by the use of the prophylactic has been as follows. The number of deaths from plague occurring in the uninoculated portion of a community is ascertained, and from this by a simple arithmetical process is calculated the number of deaths which might have been expected to occur in the inoculated portion of the community if they had died at the same rate as the uninoculated. The difference between this figure and the actual number of plague deaths in the inoculated population is then found and expressed as a percentage of the anticipated number of deaths. An example will make quite clear the process involved and it will be most convenient to use

round figures. We may suppose a mixed population of 3000 persons, of whom 2000 are uninoculated and 1000 inoculated. We may further suppose that 500 of the former die from plague and 50 of the latter. It is clear that if the inoculated had died at the same rate as those not inoculated 250 of them would have died; but only 50 did so. The reduction in mortality was therefore 200 in actual figures, or 80 per cent. upon the anticipated number of deaths.

The Commissioners have, however, through the greater part of their recently issued report followed a totally different method. They have ascertained the percentage ratio borne by the number of plague deaths in the inoculated to the total numbers of inoculated, and the corresponding figure for the uninoculated. Subtracting the former from the latter the difference is taken to represent the "diminution in mortality in favour of the inoculated." In the hypothetical instance just discussed this method would work out as follows: the percentage mortality in the uninoculated in the case supposed was 25 per cent., that among the inoculated was only 5 per cent. According to the method followed by the Commissioners the "diminution in mortality in favour of the inoculated" would be expressed at 20 per cent.

As to which of these methods is the fairer and more correctly represents the results obtained there can, we believe, be but one reply. The method adopted by Mr. Haffkine is, it may be confidently asserted, not only the fairer but the only correct way of expressing the results. The fallacy involved in the method selected by the Commissioners may be at once shown by a concrete example taken from the pages of their report. On page 55 is a table showing the effect of the inoculations upon the Punjabi Khojas, and on page 58 is another analogous table referring to certain houses occupied by Khojas in Karachi. In the former the uninoculated lost by plague 2·4 per cent. of their number, the inoculated 0·75 per cent., and the difference was 1·6 per cent. In the latter the uninoculated lost 15·7 per cent. of their number, the inoculated 5·1 per cent., and the difference was 10·6 per cent. In each case the Commissioners regard the difference as the "diminution of mortality due to inoculation," and to the ordinary reader it would be open to infer that the inoculations in the latter instance were more efficacious than in the former in the proportion of 10·6 to 1·6, or very nearly as 7 to 1. Yet it will be seen that this was not the case and that in each instance the reduction in mortality was almost identical, the inoculated in each group having a percentage mortality something less than one-third of that in the uninoculated. When worked out upon Mr. Haffkine's method this practical identity in results would be at once clearly seen.

The Commissioners take exception to Mr. Haffkine's statement that "one can say in a general manner that the reduction in the mortality produced by inoculation is between 80 and 90 per cent." "Such a statement," they write, "taken apart from the actual figures, might be taken to imply either that inoculation had averted death from 80 to 90 persons (*a*) in every 100 of the total population, or (*b*) in every 100 of the inoculated population, or (*c*) in every 100 inoculated persons attacked, whereas the statement really means that death was averted from 80 to 90 in every 100 of those who, without inoculation, would, judging by the mortality among the uninoculated, have died of plague." This criticism appears to us to be of the nature of hypercriticism. We believe it to be very unlikely that any intelligent person would fall into either of the suggested errors of interpretation, and if Mr. Haffkine's method correctly represents the percentage mortality "of those who, without inoculation, would, judging by the mortality among the uninoculated, have died of plague" it would appear to give a very accurate and fair means of estimating the reduction in mortality brought about by the prophylactic. This end is not attained by the method adopted by the Commissioners, and it would be very unfortunate if the figures dotting the pages of the report, which they call "diminution of mortality in favour of the inoculated," and which vary from 0·1 to 36·4 per cent., were regarded as truly representing the beneficial results of the inoculations.

It is only in the synoptical tables that the Commissioners resort to a more correct method of representing results. In column 10, for example, of the table on page 71 of the report are a series of figures expressing the "ratio of plague deaths among the uninoculated to plague deaths among an equal number of inoculated." This ratio was in Undhera 10 to 1, in Bulsar 3·7 to 1, in Hubli 9·6 to 1, and so on. No possible exception can be taken to this method. It merely expresses the mortality in the uninoculated in terms of that in the inoculated, while Mr. Haffkine's method expresses the reduction of mortality in the inoculated in terms of the mortality in the uninoculated. The two sets of figures are published in the Commissioners' synoptical tables in parallel columns and (apart from one or two obvious clerical errors) they present identical results. They are, in fact, the same results expressed in two different ways. This being so, it is not easy to see why the Commissioners should adversely criticise Mr. Haffkine's statistical method of presenting his results when in the end they actually adopt that method, merely expressing the same results in another way. (For example, in Gadag 2·3 per cent. of the uninoculated and 0·6 per cent. of the inoculated died; the ratio of plague deaths among the uninoculated to those among an equal number of inoculated was 3·8 to 1, and Mr. Haffkine's figure for the diminution of mortality in favour of the inoculated is 74. A simple arithmetical exercise will show that these figures, and the same is true for the other places mentioned in the table, are convertible.) This being so, too, it is almost incredible that immediately after the synoptical table containing these figures should appear the following remarks from the Commissioners: "This [Mr. Haffkine's] method, though it affords information which is of value to those who desire to ascertain how far the effects of the vaccine have approximated to the ideal standard which would have been attained if all cases of plague had been averted from the inoculated, gives results which are likely to convey a wrong impression to the administrator. It will be seen that whereas the diminution of mortality which was achieved by the introduction of inoculations among the troops at Bangalore amounted actually to 0·8 per cent., it figures, when calculated out according to Mr. Haffkine's method, as 53·3 per cent." Surely the Commissioners cannot seriously regard the former as a fairer statement of facts than the latter? or, indeed, as in any sense a fair statement of facts? "Taken apart from the actual figures"—the criterion of criticism they have themselves applied in judging of the other method—such a statement as the above, that "the diminution of mortality achieved by the introduction of inoculations among the troops at Bangalore amounted actually to 0·8 per cent.," could only mean that the mortality among the inoculated was to that in the uninoculated as 99·2 to 100. This is obviously an extremely inaccurate statement and one which gives a totally wrong conception of the beneficial results achieved by the inoculations in Bangalore.

We have dwelt at some length upon the adoption by the Commissioners of this erroneous statistical method, in preference to Mr. Haffkine's correct method, as its tendency is to minimise the value of prophylactic inoculation in plague, though the Commissioners have themselves admitted its value and the desirability of encouraging it in every way. It is a blemish of some magnitude on an otherwise careful and valuable piece of criticism.

## THE ANNUAL REPORT (1898) OF THE MEDICAL OFFICER OF HEALTH OF LONDON.

### III.

HAVING dealt in recent numbers[1] of THE LANCET with Parts I. and III. of Mr. Shirley Murphy's report, we now come to notice, of necessity very briefly, Part II. of that report, which treats of sundry matters that could not conveniently be included in any of its other sections.

Availing himself of certain tables in the last census report which show the proportion of the population occupying tenements of not more than five rooms and living more than two in a room, Mr. Shirley Murphy has set himself to investigate the relation of overcrowding to mortality, and especially to phthisis mortality, in each of the sanitary districts of the metropolis. An instructive table is given which shows unmistakeably that there is a close relation

[1] THE LANCET, Jan. 27th, p. 256, and Feb. 17th, p. 490.

between the degree of overcrowding and the proportion of mortality from phthisis, especially where overcrowding is represented by a proportion exceeding a fourth of the population living more than two in a room. The figures, however, do not determine whether the overcrowding is the actual cause of the phthisis or whether the disease by adding to family expenditure or by diminishing wage-earning power leaves less money available for rent and thus brings about overcrowding. Another table shows that the phthisis mortality at each age increases with overcrowding, though not in the same proportion. With unimportant exceptions it appears that the death-rates at the later ages follow the order of overcrowding, the differences between the mortality in the several districts being most marked at those ages at which the mortality from phthisis is the heaviest. This point having been settled Mr. Shirley Murphy proceeds to inquire whether it is in respect of phthisis only that excessive fatality is specially related to overcrowding, or whether, on the other hand, the same connexion exists between non-tuberculous mortality and insufficient air-space in the dwelling.

In a previous report[2] Mr. Shirley Murphy submitted evidence proving that although the aggregate mortality from "all causes other than phthisis" follows overcrowding in the same manner as does that from phthisis, nevertheless the several forms of disease differ widely in this respect. The experience of 1893 teaches the same lesson: an interesting chart is appended which shows that in that year the decrease of mortality from phthisis is well marked as the line travels from the most to the least overcrowded districts, but that the mortality from tuberculous meningitis manifests this fall in a much less degree and that from tabes mesenterica even less still. The relation of overcrowding to mortality from the ordinary zymotic diseases is not particularly apparent, while cancer fatality does not seem to be affected in any way by overcrowding. The statistics for 1893 therefore indicate that whilst overcrowding tends to produce excessive mortality from all causes this tendency is especially manifested in the case of phthisis, whilst no such relation can be traced in the case of many other prevalent causes of death. Probably this difference in behaviour may eventually be found to depend on differences in the causation and age-distribution of particular diseases.

In several earlier reports Mr. Shirley Murphy has considered with befitting care the influence which is exerted by school attendance on the spread of infectious diseases. In the present report he reiterates the opinion, often previously expressed, that while the usual exodus from London consequent on school closure in August may be held to explain much of the reduced prevalence of diphtheria and scarlet fever which undoubtedly takes place every year during that month, nevertheless this hypothesis does not account for the whole of the reduction which actually occurs, the residue being attributable, in his judgment, to diminished opportunity for infection at school. With a view of ascertaining the extent to which absence of school children from London may have affected the general prevalence of infectious disease in August he falls back on the statistics of enteric fever as the notifiable disease which may be regarded as less communicable than any other disease of its class from one person to another. As there are now available the statistics of seven years he has taken pains to compare the prevalence of this disease with that of diphtheria and scarlet fever, for although the numbers notified at the separate ages are not large enough to warrant conclusions of a precise character, nevertheless they are sufficient for purposes of comparison. By the help of tables it is shown that whilst there is an actual decrease in the number of cases both of diphtheria and scarlet fever notified in August as compared with the number notified in July, which decrease especially affects children of school age, there is no evidence whatever of similar decrease in the number of notified cases of enteric fever.

Mr. Shirley Murphy next takes into consideration the seasonal variation in age incidence as well as in fatality of infectious diseases notified under the Act. A series of tables are given showing the age-distribution of cases of scarlet fever and diphtheria in each month since 1892. The table relating to scarlet fever shows that the proportion of children attacked under five years of age is greatest at the early part of the year, and that the proportion falls to a minimum in September, subsequently rising again towards the end of the year. There is arrest of the fall in August, due to the fact that children of school age are not contracting disease at school, and children under five years of age therefore constitute a larger proportion of the total cases. The table relating to diphtheria shows that the largest proportion of attacks under five years occurs in March and April and the least in September. As in the case of scarlet fever the proportion of diphtheria attacks under five years of age is unduly high in August—a fact doubtless attributable to the closure of the schools in that month. So much with regard to the incidence of *attacks*. With respect to *mortality* it appears that in the case of scarlet fever this is greatest at the beginning of the year, that it falls gradually until the end of September, and subsequently increases towards the end of the year. The fatality from diphtheria follows much the same course, except that the minimum occurs some two or three months earlier than in the case of scarlet fever. Fatality is necessarily affected by the ages of the patients, but correction for this does not suffice to account for the variations in severity at different seasons which is found to attend attacks by this disease.

In view of the great importance which attaches to the treatment of diphtheria by antitoxic serum Mr. Shirley Murphy's remarks on this subject are full of interest. It appears that, as in previous years, the incidence of diphtheria *attack* at "all ages" was greater in 1898 on females than on males, while the incidence of *death* at "all ages" was greater on males than on females. The *incidence of attack* was greatest on both males and females aged four years, while the *incidence of death* was greatest on both males and females at two years of age. As in previous years, the fatality was greatest among infants under one year old. A table is inserted in the report which shows the variations in the case mortality at the several ages. The marked fall in the fatality at "all ages" and especially at the younger ages in recent as compared with earlier years, is very marked. He therefore suggests the important question, "How far is this fall due to the use of antitoxic serum?"

In the statistical report for 1898 of the Metropolitan Asylums Board there appears a table showing a very remarkable decrease in the case mortality of diphtheria treated in hospital with the help of antitoxic serum during 1895-98, as compared with the years 1888-94, before antitoxic serum was in general use. Mr. Shirley Murphy, however, does not feel justified in attributing the whole of this decrease to the use of the serum, for he shows that a similar decrease has taken place in respect of the hospital cases of scarlet fever within the same period. Apart from the question of treatment there is no doubt that the following circumstances have affected the mortality: (*a*) notification of infectious cases has certainly been more general in the later than in the earlier period; and (*b*) the proportion of diphtheria attacks admitted to hospital has been greater recently than in former years. The first of these changes would tend to reduce the fatality in London as a whole, the second to have reduced the fatality of the hospital cases. He summarises the case thus. 1. There has been a lower fatality both in the case of diphtheria and of scarlet fever in the period 1895-98 compared with 1892-94. 2. Whereas both in 1892-94 and 1895-98 the fatality among scarlet fever cases in the Metropolitan Asylums Hospitals has been greater than among notified cases treated elsewhere, the fatality among diphtheria cases in the Board's hospitals, which in 1892-94 was greater than among home cases, was in the period 1895-98 practically the same at "all ages," and much lower at the younger ages than among cases not admitted to the hospitals of the Board.

[2] See Report of the Medical Officer of Health of the County of London for 1894, p. 43.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6741 births and 4729 deaths were registered during the week ending March 3rd. The annual rate of mortality in these towns, which had been 25·8 and 24·2 per 1000 in the two preceding weeks, further declined last week to 21·2. In London the rate was 19·0 per 1000, while it averaged 22·7 in the 32 provincial towns. The lowest death-rates in these towns were 14·8 in Gateshead, 15·9 in West Ham

and in Croydon, 16·8 in Nottingham, and 17·2 in Brighton; the highest rates were 29·8 in Preston, 30·1 in Plymouth, 30·7 in Salford, and 31·2 in Liverpool and in Blackburn. The 4729 deaths in these towns included 416 which were referred to the principal zymotic diseases, against 469 and 444 in the two preceding weeks; of these 121 resulted from whooping-cough, 115 from measles, 75 from diphtheria, 40 from "fever" (principally enteric), 32 from scarlet fever, 32 from diarrhœa, and 1 from small-pox. No fatal case of any of these diseases occurred last week in Croydon, Swansea, Birkenhead, or Gateshead; in the other towns they caused the lowest death rates in Plymouth, Nottingham, Derby, and Hull, and the highest rates in Wolverhampton, Salford, Oldham, Blackburn, and Preston. The greatest mortality from measles occurred in Bristol, Wolverhampton, Blackburn, Preston, and Sunderland; from scarlet fever in Burnley; and from whooping-cough in Birmingham, Norwich, Salford, and Blackburn. The mortality from "fever" showed no marked excess in any of the large towns. The 75 deaths from diphtheria included 26 in London, nine in Sheffield, six in Leicester, six in Leeds, five in Portsmouth, four in West Ham, and four in Liverpool. One fatal case of small-pox was registered last week in London, but not one in any other of the 33 large towns. There were seven cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Saturday last, March 3rd, against 17, eight, and 11 in the three preceding weeks; two new cases were admitted during the week, against one, none, and three in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1872, against numbers decreasing from 3578 to 2009 on the 15 preceding Saturdays; 154 new cases were admitted during the week, against 157, 159, and 160 in the three preceding weeks. Influenza was certified as the primary cause of 42 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had been 527 and 485 in the two preceding weeks, further declined last week to 380, and were 188 below the corrected average. The causes of 74, or 1·6 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bolton, Oldham, and in eight other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, Manchester, and Sheffield.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased from 23·0 to 31·7 per 1000 in the seven preceding weeks, declined again to 29·0 during the week ending March 3rd, but exceeded by 7·8 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·6 in Leith and 21·2 in Aberdeen to 30·4 in Perth and 34·2 in Glasgow. The 897 deaths in these towns included 20 which were referred to measles, 18 to diarrhœa, 15 to whooping-cough, 10 to scarlet fever, six to "fever," and five to diphtheria. In all 74 deaths resulted from these principal zymotic diseases, against 82 and 69 in the two preceding weeks. These 74 deaths were equal to an annual rate of 2·4 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had been 24 and 17 in the two preceding weeks, rose again to 20 last week, and included 10 in Glasgow, four in Dundee, and four in Paisley. The deaths from diarrhœa, which had been 20 and 19 in the two preceding weeks, further declined last week to 18, of which eight occurred in Glasgow, three in Edinburgh, and three in Dundee. The fatal cases of whooping-cough, which had been 18 and 17 in the two preceding weeks, further decreased to 16 last week, and included six in Glasgow, three in Aberdeen, two in Edinburgh, and two in Paisley. The deaths from scarlet fever, which had been 11 and nine in the two preceding weeks, rose again last week to 10, of which nine were registered in Glasgow. The fatal cases of "fever," which had been two in each of the two preceding weeks, increased to six last week, and included four in Glasgow. The five deaths from diphtheria, of which four were recorded in Glasgow, corresponded with the number in the preceding week. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 172 to 362 in the five preceding weeks, declined again to 324 last week, but were 111 above the number in the corresponding period of last year. The causes of 50, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7, 42·4, and 51·0 per 1000 in the three preceding weeks, declined again to 34·3 during the week ending March 3rd. During the past four weeks the death-rate in the city has averaged 39·4 per 1000, the rate during the same period being 21·0 in London and 25·5 in Edinburgh. The 230 deaths registered in Dublin during the week under notice were 112 less than the number in the preceding week, and included 12 which were referred to the principal zymotic diseases, against 17, 15, and 11 in the three preceding weeks; of these five resulted from diarrhœa, four from "fever," one from measles, one from scarlet fever, and one from diphtheria. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 1·6 in London and 1·2 in Edinburgh. The fatal cases of diarrhœa, which had been two and four in the two preceding weeks, further rose to five last week. The deaths referred to different forms of "fever," which had been three and one in the two preceding weeks, increased again last week to four. The mortality from measles showed a marked decline from that recorded in the preceding week. The 230 deaths registered in Dublin last week included 35 of infants under one year of age and 69 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a considerable decrease from the numbers in the preceding week. Four inquest cases and two deaths from violence were registered, and 84, or more than a third, of the deaths occurred in public institutions. The causes of 10, or more than 4 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following qualified candidates for the Royal Navy Medical Service have been appointed to be Surgeons in Her Majesty's Fleet:—Herawald Evelyn Croker Fox, James Garfit Wallis, William Percival Walker, Robert William Glennan Stewart, John O'Hea, Robert Robertson Fasson, John Reid Muir, Leonard Sykes Whitwam, Arthur Forbes Fraser, Arthur Stanley Frank, Herbert Reginald Harry Denny, Ralph Bignell Ainsworth, John St. John Murphy, Alfred James Hewitt, Gerald Meade Eastment, Henry Ivers Rogers, Alexander Cameron Renwick, Walter Percy Dyer, Thomas Hedley Vickers, and Richard Rothwell Horley.

Surgeon Ernest Albert Shaw has been allowed to withdraw from Her Majesty's Naval Service with a gratuity.

The following appointments are notified:—Staff Surgeons: R. W. Anderson to the *Caledonia*; J. H. Stenhouse for medical charge of the *Edgar* on voyage home. Surgeons; J. W. W. Stanton, for medical charge of the *Edgar* on voyage to China; P. T. Sutcliffe to the *Boscawen* for the *Seaflower*; R. Hughes to the *St. Vincent* for the *Martin*; E. O. B. Carbery to the *Boscawen* for the *Dolphin*; G. E. Glynn to the *Boscawen* for the *Wanderer*; J. K. Raymond to the *Impregnable* for the *Nautilus*; G. M. O. Richards to the *Impregnable* for the *Pilot*; A. J. Laurie to the *Lion* for the *Liberty*; J. H. Jones to the *Sharpshooter*; F. Bradshaw to the *Bellona*; J. C. Ferguson to the *Wallaroo*; F. Bolster to the *Rosario*; T. E. Honey to the *Basilisk*; and E. Haines to the *Humber*.

### THE IMPERIAL YEOMANRY.

Surgeon-Captain J. Wreford, 1st Northumberland Volunteer Artillery, is granted the temporary rank of Captain whilst serving with the Volunteer Battery in South Africa. To be Medical Officers, with the temporary rank of Captain: Emelius Hopkinson and Hay Reynolds.

### COLONEL LUMSDEN'S CORPS.

Surgeon-Captain Samuel A. Powell, Surma Valley Light Horse Volunteers, to be Medical Officer, with the temporary rank of Captain; William Stevenson to be Veterinary Officer, with the temporary rank of Lieutenant.

LORD STRATHCONA'S CORPS.

Campbell B. Keenan to be Medical Officer, with the temporary rank of Captain.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Surgeon-Lieutenants of the Volunteer Medical Staff Corps are granted the temporary rank of Lieutenant whilst serving in South Africa:—John William Smith, and Edmund William Herrington.

The following officers are detailed for duty with No. 9 General Hospital:—Majors A. Hosie and M. T. Yarr, and Captain F. Smith, R.A.M.C., and Surgeon-Lieutenants J. W. Smith and E. W. Herrington, Volunteer Medical Staff Corps.

Colonel C. A. Maunsell, Administrative Medical Officer in Bombay, is appointed Principal Medical Officer of the South-Eastern District in place of Colonel H. Comerford who relieves Colonel Maunsell at Bombay.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following appointments to Her Majesty's Indian Medical Service:—To be Surgeon-Lieutenants (dated Jan. 27th, 1900): Archibald Currie MacGilchrist, John Wallace Dick Megaw, Edward Owen Thurston, George Browse, Cecil Maurice Goodbody, Robert Steen, Frederick Fenn Elwes, Ian Lamont MacInnes, Ernest Albert Churchward Matthews, Lessel Philip Stephen, Leonard Gilbert, Thomas George Nesbitt Stokes, Harry Malcolm Mackenzie, Michael Harris Thornely, Francis Victor Owen Beit, William O'Sullivan Murphy, Matthew Corry, Cecil Charles Murison, Herbert Armstrong Williams, William Christopher Long, and George Crofts Beamish.—*London Gazette.*

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain John Arnallt Jones, 2nd Volunteer Battalion the Welsh Regiment, to be Surgeon-Major.

MILITIA.

*Infantry:* 4th Battalion the Lincolnshire Regiment: Surgeon-Lieutenant-Colonel G. W. Shipman, Militia Medical Staff, resigns his commission, with permission to retain his rank and to wear the prescribed uniform on his retirement.

YEOMANRY CAVALRY.

Suffolk (the Duke of York's Own Loyal Suffolk Hussars): Surgeon-Major A. Cooper to be Surgeon-Lieutenant-Colonel.

VOLUNTEER CORPS.

*Royal Engineers* (Volunteers): 1st Devonshire and Somersetshire: Arthur Stanley Wohlman to be Surgeon-Lieutenant. *Rifle:* 1st Roxburgh and Selkirk (the Border): William Hall Calvert to be Surgeon-Lieutenant. 4th Volunteer Battalion the Cameronians (Scottish Rifles): Surgeon-Captain G. McIntyre resigns his commission. 2nd Volunteer Battalion the Royal Sussex Regiment: George Reuben Robins Paine to be Surgeon-Lieutenant. 5th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Lieutenant E. L. Paton to be Surgeon-Captain. 1st Tower Hamlets: Surgeon-Captain W. D. Waterhouse to be Surgeon-Major.

TRANSVAAL WAR NOTES.

The Government has sent a communication to each of the Universities of Glasgow, Edinburgh, St. Andrews, and Aberdeen asking for medical student volunteers.

The fund for the Welsh Field Hospital has been augmented by the sum of £150, the proceeds of a banquet and special appeal by Mr. Lloyd George, M.P.

Lieutenant-Colonel W. A. May, R.A.M.C., of the Eighth Division, will leave Southampton for South Africa to-day (Saturday).

We have received the plans of the Building Trades' magnificent gift to the nation, which takes the form of homes of rest and convalescent homes for discharged soldiers. These will be erected at Bisley at a cost to the Building Trades of £25,000.

The staffs of the Imperial Yeomanry Field Hospital and Bearer Company will be composed as follows:—*Field Hospital.*—Chief Surgeon and Military Commandant: Major C. Stonham, Senior Surgeon to Westminster Hospital. Surgeon: Mr. T. H. Openshaw, Surgeon to the London Hospital. Assistant Surgeons: Mr. A. W. Sheen, Assistant Surgeon to the Cardiff Infirmary, and Mr. A. H. Evans, Surgeon to the East Dispensary, Liverpool. Physician and Anæsthetist: Dr. J. Purves Stewart, Assistant Physician to Westminster Hospital. Dressers: Dr. C. H. Jefferys, St. George's Hospital; and Mr. E. O. Carlin, Mr. S. W. Crowther, Mr. C. H. M. Hughes, Mr. C. A. Gill, Mr. G. J. Marett, and Mr. W. C. Nimmo, all of Westminster Hospital. *Bearer Company.*—Major G. E. Hale, R.A.M.C., D.S.O. Assistant Surgeons: Mr. A. A. Scot Skirving, Surgeon to Leith Infirmary, and Dr. Frederick Green. An inspection will take place on Monday at Devonshire House by the Prince of Wales and the hospital staff will probably sail about Tuesday in the steamship *Winkfield*.

Surgeon-Captain Steele, Militia Medical Staff, has been ordered from Netley to Aldershot preparatory to his proceeding to South Africa.

The *Nile* transport arrived at Southampton on Monday, March 5th, with two officers and 40 men from the scene of war in South Africa. One of the men, O'Leary by name, of the West Surrey Regiment, was wounded by a Mauser bullet at Colenso. The ball was removed from the brain under the supervision of Sir William Mac Cormac at Maritzburg Hospital. All the men had served under Sir Redvers Buller in the attempt to cross the Tugela on Dec. 15th, 1899. The invalids were admitted to the Royal Victoria Hospital, Netley, during the morning. On the same day the Cunard steamer *Aurania* arrived at Southampton from South Africa. She carried 174 wounded invalids, but arrived so late in the day that the men were not admitted to Netley Hospital until 9.30 in the evening.

The s.s. *Dunera* arrived in port on March 4th. She carried 28 invalids who were sent on to Netley. The transport *Britannic* from the Cape also arrived at Southampton on March 4th, having on board three officers and 40 men invalided from the seat of war. Most of the wounded had been engaged with Lord Methuen's column at Magersfontein and Modder river and had passed through the Wynberg Hospital. Many of the wounded had lost limbs. They were sent on to Netley by special train.

We hear that 32 additional Dœcker huts are being erected in the rear of the Royal Victoria Hospital, Netley, also 40 iron huts and the necessary cook-houses and offices. The 102 huts are to be used for convalescents and will accommodate over 1000 men.

Messrs. Offord and Sons of Gloucester-road and Fulham-road, S.W., have presented the Imperial Yeomanry Loyal Suffolk Hussars with a two-wheeled ambulance vehicle, light in construction, but strong and well suited for rapid transit. Two removeable stretchers are placed on the floor of the vehicle, and at a short distance above them there is a frame carrying two other similar stretchers. These four stretchers with sick or wounded men can be lifted in or out at the back with the utmost readiness, the vehicle being steadied, if necessary, during the process by temporary iron props fixed to the back and front of the body and resting on the ground. There is an ingenious arrangement by which the frame for holding the upper two stretchers can, when not required for that purpose, be at once converted into seats. Particular attention has been paid to the springs supporting the body. The vehicle is covered with canvas stretched over an iron frame which can be taken to pieces. It is provided both with shafts for one horse and with a pole for two. A basket to hold medical and surgical requisites is slung underneath with straps. The wheels are about four feet in height.

The authorities of the German Hospital at Dalston have placed 10 beds at the disposal of the War Office for the use of soldiers invalided from South Africa.

Five railway ambulance carriages are being built for the medical department of the War Office by the London and South-Western Railway Company and are expected to be completed within a week or two. Each carriage will be 48 ft. long and 8 ft. wide and will be carried on steel bogies of the latest improved pattern. The interior arrangements will consist of a central compartment 31 ft. 3 in. long in which there will be 12 spring beds and seating accommodation for the less serious cases. At each side of the carriage there will be double doorways to allow of the spring beds being carried in and out. The end compartments will be one for the medical or invalid officers and the other for patients, each having a lavatory adjoining. Each carriage will be provided with a gas-stove for warming food, together with other necessary accessories, and there will be gangways connecting the carriages to enable the medical staff to pass from one vehicle to another.

The Gamle Carlsberg Breweries Alliance, Copenhagen, has given to the hospital ship *Princess of Wales* 200 dozen of their specially brewed imperial stout.

The secretary of the Central British Red Cross Committee writes to say that the statement which has appeared in several papers to the effect that the Doecker huts recently erected at Netley were lent by the German Red Cross Society is not true. Through the kindness of the Central Committee of the German Red Cross Societies the Central British Committee was able to obtain within a very short time a large number of huts which the manufacturers had been making to the order of the German Central Committee, but the huts have been purchased, not obtained on loan.

### THE ARMY ESTIMATES.

According to the army estimates for the financial year which commences on April 1st and ends on March 31st, 1901, the total number of men for which provision is made is 430,000, as compared with 184,853 in the estimates of 1899–1900, a net increase of 245,147. The expenditure for the coming year is put down at £61,499,400, as against £20,617,200 in the estimates for the 12 months now drawing to a close, an increase of £40,882,200. In addition, there was this year a supplementary estimate of £10,000,000 and 35,000 men passed by the House of Commons in October, and the supplementary estimate for £13,000,000 and 120,000 men agreed to last month. Among the separate items in the estimates is one for £555,000 for pay, &c., of the medical establishment. In Lord Lansdowne's remarks dealing with the increases in the various votes the War Minister says: "The medical vote has been nearly doubled owing to the war. All the available officers of the Royal Army Medical Corps ordinarily on the home establishment have been sent to South Africa, and their places at home have been filled by the employment of retired officers and civil medical practitioners. In addition a large number (223) of civil surgeons have been sent to the seat of war. The services of seven surgeons of eminence have been accepted as 'consulting surgeons' to the army in the field. The Army Nursing Reserve, which was constituted in 1897, has been largely drawn upon to supplement the Army Nursing Service in the field and at home, and the services of members of the St. John Ambulance Brigade have been largely utilised. Provision has been made for a large increase of officers of the Royal Army Medical Corps, and a further addition has been made to the establishment of non-commissioned officers and men." As at present arranged the Army Estimates will not be taken later, at all events, than Monday next. But for the indisposition of Mr. Wyndham it would have been definitely arranged to take them on Thursday or Friday.

### ARMY MEDICAL SCHOOL, EIGHTIETH SESSION, 1900.

The following is a list of nominated surgeons on probation, Royal Army Medical Corps:—

| Names. | Qualifications. | Studied at |
|---|---|---|
| A. F. Weston ... | L.S.A. Lond. | St. George's Hosp., Lond. |
| P. G. Stock ... ... | M.R.C.S. Eng. L.R.C.P. Lond. | Bristol. |
| J. M. Cuthbert ... | M.B., Ch.B. Edin. | Edinburgh. |
| F. MacLennan ... | M.B., Ch.B. Aberd. | Aberdeen. |
| J. Dorgan ... ... | M.B., B.Ch. R.U.I. | Queen's College, Cork. |
| G. Carroll ... ... | L.R.C.S. & L.R.C.P. Irel. | Catholic University School of Medicine, Dublin |
| G. J. Houghton | L.R.C.P. & S. Irel. | Trinity College, Dublin. |
| C. H. Furnivall ... | M.R.C.S. Eng., L.R.C.P. Lond. | St. Mary's Hospital, London. |
| H. B. Faweus ... | M.B., B.S. Durh. | Newcastle-on-Tyne. |
| R. T. Brown ... | M.B., B.S. Durh., M.R.C.S. Eng., L.R.C.P. Lond. | Guy's Hospital, London. |
| B. S. Bartlett ... | M.R.C.S., L.R.C.P. | University Hospital, London. |
| E. Bennett ... ... | L.R.C.S. & L.R.C.P. Irel. | Royal College of Surgeons, Dublin. |
| F. G. Fitzgerald ... | L.R.C.S. & L.R.C.P. Irel. | Ditto. |
| D. O. Hyde ... ... | B.A., M.B., B.Ch., B.A.O. Dub. | Trinity College, Dublin. |

### DEFECTIVE SANITATION IN THE ITALIAN NAVY.

In the *Rivista Maritima* for October, 1899, Dr. Belli of the Italian navy draws attention in a very outspoken article to the defective sanitation of the fleet. On board the Italian men-of-war, he says, ordinary comfort is sacrificed to ridiculous ornamentation, while æsthetic adornment takes the place of wholesome cleanliness. Descending to particulars the writer continues his attack *seriatim*: 1. The ventilation is almost inoperative, not having been thought of until after the hulls had been partitioned off. The ventilators are distributed in a haphazard fashion; and apparently a large cabin is considered to be thoroughly provided for when a single minute inlet has been inserted. 2. The water-supply, derived from distillation, is barely sufficient for drinking purposes and is totally inadequate for ablution. 3. The kitchens, storerooms, &c., are all dark, stuffy, and impossible to keep clean. 4. The latrines, which are on the Turkish system, are indescribable: there are no lavatories except in a few ships where they exist for the stokers alone, and the officers' baths are so ill-fitted that they are never used. 5. There are no "cold rooms" for preserving meat and putrescible food. 6. The appliances for washing clothes are most inadequate, boiling being for the most part the only detergent method possible. 7. The sick bays and dispensaries are all insufficient and old-fashioned; few ships are provided with disinfecting apparatus. In conclusion Dr. Belli gives a highly laudatory account of the United States Museum of Naval Hygiene, having had the opportunity of inspecting that institution when he visited New York in 1897 in the *Colombo*, of which vessel he was surgeon-major.

### MARCHES AND SOLDIERS' EQUIPMENT IN SOUTH AFRICA.

It has been found as a matter of experience in South Africa, as well as upon many other occasions in previous expeditions, that marching troops for long distances in the heat of the day is attended with a good deal of falling out from heat exhaustion and sunstroke, especially where an abundant supply of water is not available, as sometimes must be the case. A special correspondent of the *Standard* calls attention to the experience of the troops in these respects on the occasion of the march on Feb. 3rd of General Macdonald's Highland Brigade, and dwells upon the unsuitability of the equipment of the men for a campaign in South Africa, with the addition of a weight of 150 rounds of ammunition. He alludes also to the unsuitability of the kilt for the marches and exceptional kind of field service in South Africa, with its difficult rocky ground and stretches of country covered with a kind of sharp thorn scrub. It would, no doubt, be better to have all the troops clad in khaki and to reserve the kilt for other occasions. During the future operations attempts will probably be made, as far as practicable, to hug rivers and streams in the marches and to take every advantage of lines of rail—on the route to Pretoria, for example. But it is scarcely necessary to point out that troops must go where they are required and that however desirable it is to carry their kits for them it frequently cannot be done.

### DEATHS IN THE SERVICES.

Surgeon Benjamin Grant Heather, R.N., at the Royal Navy Hospital, Stonehouse, on March 2nd, in his thirty-first year. Mr. Heather received his medical education at St. Thomas's Hospital, London, and qualified L.R.C.P. Lond. and M.R.C.S. Eng., in 1893. The deceased officer had held the rank of surgeon in the Royal Navy since May 16th, 1894. His last appointment was on the battleship *Magnificent*.

Inspector-General of Army Hospitals Thomas Guy, M.D. Heidelb., F.R.C.P. Lond., at his residence, Dover, in his eighty-first year, on March 3rd.

Captain Alan Jasper Heath, I.M.S., recently, at Exminster, aged 34 years. Captain Heath was the son of Mr. Christopher Heath, F.R.C.S. Eng.

### ROYAL NAVY MEDICAL SERVICE EXAMINATION.

The under-mentioned gentlemen who competed on Feb. 19th, 1900, and following days at Examination Hall, Victoria-embankment, for appointments as surgeons in the Royal Navy have been granted commissions:—

| Name. | Marks. | Name. | Marks. |
|---|---|---|---|
| H. E. C. Fox, M.B. ... ... | 2436 | H. R. H. Denny ... ... | 2028 |
| J. G. Wallis, M.B. ... ... | 2334 | R. B. Ainsworth ... ... | 2020 |
| W. P. Walker, M.B. Lond. ... ... ... ... | 2320 | J. H. J. Murphy ... ... | 2005 |
| R. W. G. Stewart, M.B. R.U.I. ... ... ... ... | 2270 | A. J. Hewitt ... ... ... | 1950 |
| J. O'Hea ... ... ... ... | 2258 | G. M. Eastment ... ... | 1901 |
| R. R. Fasson, M.B. ... | 2234 | H. J. Rogers, B.A., M.B. | 1883 |
| J. R. Muir, M.B. Edin. ... | 2211 | A. C. Renwick, M.B. ... Edin. ... ... ... ... | 1873 |
| L. S. Whitwam, M.B. ... | 2173 | W. P. Dyer ... ... ... | 1848 |
| A. F. Fraser, M.B. Edin. | 2098 | T. H. Vickers ... ... ... | 1806 |
| A. S. Frank, M.B. ... ... | 2041 | R. R. Horley ... ... ... | 1717 |

Lieutenant-Colonel J. Lewtas, M.D. Lond., I.M.S., second surgeon to the Calcutta Hospital, who is at

present at home on furlough, has been asked to serve at the Royal Victoria Hospital owing to the emergency created by the war in South Africa. Colonel Lewtas joined at Netley on March 2nd and is posted to the medical division for duty.

The services of Sir Thomas Fitz-Gerald, F.R.C.S. Irel., senior surgeon to the Melbourne Hospital, have been accepted by the British Government for South Africa.

# Correspondence.

"Audi alteram partem."

## "BORIC ACID IN FOOD."

*To the Editors of* THE LANCET.

SIRS,—Dr. M. K. Robinson in his letter to THE LANCET of Jan. 13th, 1900, p. 131, quotes against me a reference, made by me to Dr. Annett's investigations, that "all that these experiments really prove is already known—viz., that animals finally succumb under the repetition of large doses." He says: "This admission utterly destroys the value of Dr. Liebreich's experiment for the purpose of argumentative disproof of the toxic effect of boric acid in the case I narrated." But what I said referred only to Dr. Annett's experiments on kittens, which were given extraordinarily large doses of boric acid during a long period of time, whereas in the cases cited by Dr. Robinson the fowls were only given one large dose. And this dose cannot have been large enough to produce any ill-effects, because in that case the blancmange would have been uneatable on account of its strong taste. It is thus inadmissible to quote my reference to Dr. Annett's experiments as applicable to those of Dr. Robinson. Dr. Robinson further seeks to defend his contention that the case was one of boric acid poisoning by pointing out that the fowls died which ate the most blancmange and that those which took least recovered; and, further, says that the symptoms were very typical of poisoning by large doses of boric acid and that large quantities of boric acid were found, on the one hand, in the milk from which the blancmange was made and, on the other hand, in the crop and stomach of the dead fowls.

It cannot be regarded as in any way typical of boric acid poisoning that the fowls died which ate most of a poisonous blancmange while those which took least recovered. As regards the symptoms exhibited by his patients, which Dr. Robinson regards as characteristic of acute poisoning by boric acid, we have no knowledge of any typical symptoms of such poisoning. Nor can we form a judgment merely from symptoms, for many poisonous substances produce the same symptoms, including *suppressio urinæ*. It is natural enough that boric acid should be found in the crop and stomach of fowls which have eaten large quantities of a substance containing boric acid, and does not prove that the boric acid was the cause of their death. Such a conclusion would only be justified if the poisonous properties of boric acid in the quantities under consideration had been proved by experience of its effects upon human beings and experiments on animals. But as regards our experience of the effects upon human beings there exists no evidence for its poisonous nature. On the contrary, it has been proved, as already stated by me, "that excessive doses administered by the mouth cause only passing harm in man." Dr. Robinson would have acted more correctly if he had quoted this sentence instead of the one he did. Further, it would have been well if he had made careful experiments on animals. His experiments on the fowls only prove the poisonous nature of the blancmange and have no bearing on the question of the poisonous nature of boric acid. My own experiments on fowls conclusively show that boric acid does not poison them even when administered in doses as large as could possibly have been contained in the blancmange. The only conclusion warranted by them is that, in the case cited by Dr. Robinson, the poisonous effects were not produced by the boric acid, but by some other substance which must have been contained in the blancmange. Dr. Robinson has himself taken this hypothesis into consideration, but believes himself justified in rejecting it because a chemical analysis did not prove the presence of *tyrotoxicon*. But it is a principle universally accepted in toxicology that the negative result of a chemical analysis is not always conclusive of the absence of a poisonous substance, and this is especially true for the easily decomposable substances ptomaine and toxalbumin. Dr. Robinson also rejects the hypothesis of vanilla poisoning. Many toxicologists are now inclined to regard cases of vanilla poisoning as really due to tyrotoxin. But there are no conclusive proofs for this theory. Dr. Robinson says that he is unaware of any poisonous effects which have been traced to vanilla in a pure state. But what grounds has he for assuming that the vanilla employed by the cook in preparing the blancmange was "in a pure state"?

I do not for a moment attribute to Dr. Robinson any desire for sensational publicity; at the same time it cannot but create a sensation when poisonous properties are suddenly ascribed to a non-poisonous substance.

I am, Sirs, yours faithfully,

Berlin, March 5th, 1900. OSCAR LIEBREICH.

## THE LUNACY ACT, 1900.

*To the Editors of* THE LANCET.

SIRS,—All interested in the public asylum service will much appreciate the sympathetic tone of the leading article in THE LANCET of March 3rd (p. 631) having reference to this year's Lunacy Bill. The omission from that Bill of any pension clause is to be deprecated not merely from the point of view of the asylum official but also from that of the public. In the interest of the amelioration and recovery of the insane the importance of securing and retaining the best class of officers, attendants, and nurses for public asylums is obvious, and to do this the prospect of an assured and sufficient retiring allowance for those who have spent their best days in this arduous and trying service is essential. The improvement of the status of attendants and nurses in asylums by encouraging them to avail themselves of opportunities of training and by enlisting a share of public interest on their behalf, together with the formation of a fund for mutual benevolent aid, was the main object of the formation in 1896 of the Association of Asylum Workers, which now comprises over 3000 members and is presided over by Sir James Crichton Browne. The preparation and presentation in 1898 of a petition to the Lord Chancellor on the subject of pensions was the work of this body and not of the Medico-Psychological Association of Great Britain and Ireland (as stated in the article above mentioned). The latter is the representative organisation of asylum medical officers throughout the country and of medical men interested in psychological medicine, whilst the Association of Asylum Workers is largely (but not exclusively) composed of the "rank and file" in asylum service. Both associations are, however, interested in the question of satisfactory superannuation and have worked from their respective standpoints in similar directions in trying to secure this object, so important on public as well as on private grounds.

I am, Sirs, yours faithfully,

G. E. SHUTTLEWORTH,
Honorary Secretary, Association of Asylum Workers.

Richmond, Surrey, March 6th, 1900.

## "THE ANATOMY AND PATHOLOGY OF THE RARER FORMS OF HERNIA."

*To the Editors of* THE LANCET.

SIRS,—In connexion with the valuable lectures by Mr. Moynihan published in THE LANCET of Feb. 24th and March 3rd I may, perhaps with advantage, briefly record a case of reduction in mass of the third variety mentioned by him in the first lecture (Fig. 7 C., p. 518).

A woman, aged 65 years, was admitted into the Hampstead Workhouse infirmary on May 19th, 1899, suffering from abdominal pains and vomiting. This condition had been going on for four days and had been labeled gastritis, but when she was admitted the vomit was fæcal and there was a small irreducible swelling over the right femoral canal. After considerable difficulty she was persuaded to undergo an operation. Under A.C.E., taxis proving useless, the sac was opened and a knuckle of small intestine and some omentum were found strangulated but in a recoverable condition. I think by the slight diminution in size of the tumour during taxis that some fluid had been driven into the abdomen; there was practically none

found on opening the sac. "The stricture at the neck of the sac" was very carefully divided, and while notching the sharp edge of Gimbernat's ligament of course the peritoneum was slightly cut. On applying pressure to the bowel it presently slipped back, but without the usual pleasant gurgle. On introducing the little finger the bowel seemed to lie in a free cavity, though there was a "string" felt that was curious; this really must have been the torn edge of the peritoneum. The operation was concluded without special feature. After the operation and through the night the patient seemed a little better, but the next afternoon she began vomiting fæcal matter again; the abdomen was swollen though soft and the pulse was not good. Unfortunately she absolutely refused any further operation. She died on the 24th, nearly five days after the operation.

At the post-mortem examination I found on opening the abdomen that the accident described by Mr. Moynihan had occurred. About four inches of small intestine were lying empty and flaccid between the peritoneum and the pubes. This was very easily drawn out and was in very fair condition, so that by an abdominal section I think it would have been quite easy to have completed the operation satisfactorily. Beyond some slight hyperæmia in the neighbourhood there was not any peritonitis.—I am, Sirs, yours faithfully,

E. CLAUDE TAYLOR, M.S. Lond., F.R.C.S. Eng.,
Medical Officer to the Hampstead Workhouse Infirmary.

March 5th, 1900.

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*To the Editors of* THE LANCET.

SIRS,—In the last of Mr. Moynihan's Arris and Gale Lectures, published in THE LANCET of March 3rd, p. 597, he mentions that "four cases of inguinal cystocele have been recorded in children." To these allow me to add another case which came under the care of my friend, the late Mr. E. S. O'Grady, while he was surgeon to Mercer's Hospital in this city. The case was admitted to hospital in 1883, and in the session 1883–84 Mr. O'Grady read a paper on the subject before the surgical section of the Academy of Medicine in Ireland, the late Mr. Edward Hamilton being in the chair. As the case is an interesting one and as it does not appear in the Transactions of the Academy of Medicine I think the principal facts are worthy of being placed on record.

A boy, apparently six years old, was admitted to Mercer's Hospital under Mr. E. S. O'Grady's care suffering from a painful swelling in his left inguinal region. He stated that the swelling was there for more than a year and that he had never experienced any inconvenience from it, though latterly it had greatly increased in size. A few days before admission to hospital, when the swelling was at its largest, he had bruised it in a fall and from that time it was painful. The lump was of about the size of a small orange, rather painful to handle, and the boy drew attention to the fact that when he pressed the lump with his hands he made water. After a few days' rest in bed the pain disappeared and then Mr. O'Grady operated. On cutting on the lump he came upon a cystic tumour, uncovered by peritoneum, from which the fluid was readily expressed, with the result that urine flowed from the penis. The sac was now opened and the healthy mucous coat of the bladder came to view. A catheter was now passed through the urethra and its point was brought out through the incision. The bladder was sewn up and a radical operation performed and the boy left the hospital in a few weeks. The case resembles that of Mr. P. Pott as reported in Sir James Earle's edition of his monograph on Ruptures. It is a pity that our old classical medical writers are not more read. Neglect of them has caused us to overlook Pott's case of Mr. Nourse's patient from whom he successfully removed both ovaries before M'Dowell was out of his long clothes.

I am, Sirs, yours faithfully

Dublin, March 5th, 1900. GEORGE FOY.

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## THE OBSTETRICAL SOCIETY OF LONDON AND THE MIDWIVES QUESTION: AN APPEAL.

*To the Editors of* THE LANCET.

SIRS,—I beg, through the columns of THE LANCET, to make an earnest appeal to each fellow of the above society. There is little doubt but that this society has been the prime mover in the agitation *re* midwives' registration. Although the society was established in 1858 it was not until 1872 that it entered upon the down-grade act of examining and granting documents to intending midwives. Since that time over £3966 worth of diplomas have been sold, while over £1957 have been handed to the few fellows who conduct the said questionable examinations. I think it was one of the saddest and most humiliating episodes in connexion with any body of practitioners when they formed themselves into a voluntary society and established a "back-door entrance," so that certain persons could practise that branch of medicine known as midwifery and without undergoing the usual medical education and examination.

What will be done if other medical societies degrade themselves and their profession by following so evil an example? And can any practitioner—any honest practitioner—state that if one society takes it upon itself to grant certificates which profess to empower the holder to practise *midwifery* it is not equally open for any other society to grant a certificate empowering the holder to practise minor *medicine* or *surgery*? It is most regrettable that it has alone fallen to the lot of medical men to establish so debasing and dangerous a line of conduct. Do we hear of barristers or solicitors, or dentists, veterinary surgeons, or chemists, or any of their societies, beginning to sell diplomas to persons which profess to entitle the holders to practise minor law, dentistry, pharmacy, &c.? Thank God, they have not fallen so low. But unfortunately the degrading action of the above society has been imitated by a number of persons who took it on themselves to grant an "M.D. Bc." I refer to the "General Council of Safe Medicine, Limited," also the "National Association of Medical Herbalists"; its examining council is now competing on similar lines with the Obstetrical Society and is granting diplomas in medicine and midwifery. Now, Sirs, we all know that our legislature has appointed certain universities and colleges to examine and grant degrees and diplomas to those who wish lawfully to practise medicine, surgery, and midwifery. Unfortunately, the legislature thought that we were a body of honourable men and that every one of us would do our best to carry out the Medical Acts. Present actions show that our legislators did not know that there were a few traitors who would go behind these Acts. Had they known of this intrigue practically to repeal the Acts they would have inserted a section making it an offence if *any* persons other than those appointed by Act of Parliament granted any documents professing a power to practise.

In 1894 I petitioned the General Medical Council to make a rule to the effect that the Council will consider it "infamous conduct in a professional respect" if any practitioners other than those appointed by Parliament grant any document which professes to empower the holder to practise any branch or part of medicine, surgery, or midwifery. Mr. C. G. Wheelhouse gave the petition his powerful support (see Minutes, May, 1894). In 1895 I had a petition signed by over 40 members of the Obstetrical Society of London to the same effect as the above presented to the General Medical Council (see Minutes of the General Medical Council, May, 1895).

What I wish to propose now is that every fellow of the Obstetrical Society of London who feels that the society should cease forthwith to examine and grant documents to intending midwives shall write at once to the secretary of the society (20, Hanover-square, London, W.) stating that if the society does not cease to grant documents to intending midwives he will resign his connexion with the society. There are about 711 fellows of the society. If the majority of these resign, and, if they wish, become fellows of the British Gynæcological Society instead, they will for the same annual subscription (20*s.*) not lose anything. I shall be glad to hear from any of the society's fellows and, if they wish, to publish a list of protesters in the medical papers.

I am, Sirs, yours faithfully,

Liverpool, March 2nd, 1900. R. R. RENTOUL.

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## DEATHS UNDER CHLOROFORM.

*To the Editors of* THE LANCET.

SIRS,—I am constrained to ask space to comment on a case of death under chloroform reported in THE LANCET of Dec. 30th, 1899, p. 1811, with remarks by Dr. Mowat, the chief point to which I wish to call attention being his initial remark that "the patient undoubtedly died from syncope." It is true that when respiration begins to fail the heart's beat

rapidly weakens, but this is not primary heart failure, nor does such a patient die from syncope. It will be admitted that the criterion as to whether a man dies from syncope or paralysis of the respiratory centre is the determining whether heart or respiration fails first. Unfortunately, in the case under consideration this essential piece of information is omitted, so that it is impossible to draw any definite conclusion as to the cause of death. The information actually given on this point is that "the patient continued to breathe for a short time after his head was lowered," which was done immediately on the onset of dangerous symptoms, and that "auscultation failed to detect any heart-beat ten minutes after the appearance of dangerous symptoms." If these expressions warrant any guess (it cannot even be an opinion) as to whether heart or breathing failed first they point to primary respiratory failure. If a published case is to be of any use it must be fully reported so that all who read may form their own conclusions. In no other way can the vexed question of the mode of death under chloroform be finally settled, for no man can be expected to accept unhesitatingly another man's dictum on a questionable point. In this case I think I may claim to have shown that there is no proof that the death occurred from heart failure, but that the presumption on the imperfect facts published is that death resulted from respiratory failure. As already hinted, however, the principle at stake here is, if such is possible, even more important than the determination of the mode of death in any particular case—namely, the absolute necessity for the full and candid report of all cases of death under chloroform as an essential preliminary to the accurate determination of the mode of death in such cases. In nearly every such case reported in THE LANCET the writer expresses his opinion that death occurred from syncope, and yet a perusal of his report, lacking in detail though this almost invariably is, shows that death almost certainly occurred from respiratory failure. Unless a report is full and accurate it may just as well not be written, so far as it provides a decisive addition to our knowledge in this direction, while an accumulation of accurate clinical detail will go far towards settling this disputed point, and this determination cannot but be followed by far-reaching beneficial results. I am, Sirs, yours faithfully,

CLAYTON LANE, M.D. Lond., Lieutenant, I.M.S.

Camp Grimbum, Bebejiya, Mishmi Field Force,
Jan. 28th, 1900.

## "THE PHYSIQUE OF THE BOERS."

*To the Editors of* THE LANCET.

SIRS,—As inquiries prompted by my letter in THE LANCET of Feb. 24th, p. 574, continue to reach me please allow me to state in your columns that the title of Mr. E. Howard's book is "To-morrow," that it is published by Swan Sonnenschein at 2*s.* 6*d.*, and that the honorary secretary of the Garden City Association is Mr. C. M. Bailhache, 3, Elmcourt, Temple, E.C., from whom all information may be obtained. I am, Sirs, yours faithfully,

Belsize-road, N.W., March 5th, 1900. W. WINSLOW HALL.

## THE POSITION OF THE RETIRED ARMY MEDICAL OFFICER.

*To the Editors of* THE LANCET.

SIRS,—I would most respectfully request to publish through your influential journal the following question:—Are officers who retired from the Royal Army Medical Corps, but who are now once more doing *duty on full pay* with troops, to count their *present service towards pension?* For if not a great hardship—not to say an act of injustice—is being done to them. To quote a true case in point:—A major retired on a gratuity after 18 years' service. Six weeks before his name appeared in the *Gazette* he asked to be allowed to withdraw his resignation, but the War Office authorities refused his application, probably thinking that young medical men were about to flock into the Army Medical Service and that therefore this gentleman might easily be spared and his pension saved. A year or so afterwards, however, being very short-handed for medical officers, they were only too pleased to avail themselves of his services and placed him once more on full pay and gave him a full share of army medical work. *Is this duty to count for nothing* even towards *pension*, for the questions of promotion or of restoration to the active list can be left out of consideration for the present?

I am, Sirs, yours faithfully,

March 5th, 1900. RETIRED ON GRATUITY.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Sewerage Trouble in Bombay: the New Scheme.—The Terrible Mortality in Bombay.—Further Spread of the Plague in India.—Increase of the Disease in Calcutta.—The Impotence of the Government.*

THE city of Bombay has been troubled about its sewerage for many years. Part of it is under the Shone system, a part of the city is not sewered at all, but the greater portion has its sewage pumped out to sea on the western side of the island. Here it is that a nuisance is complained of. At certain states of the tide the sewage is seen to travel slowly southwards past the residential districts of Cumballa and Malabar Hills and it gives off most offensive odours. In order to remedy this state of things and to provide for the sewerage of the northern portions of the city the municipality sought the advice of Mr. W. Santo Crimp and he has just issued his report. From this it appears that the greater part of the city is drained into a place called Lovegrove, where four modern and powerful engines pump the sewage out to sea on the western side of the island six feet below the lowest spring-tide. Each engine is capable of pumping 15,000,000 gallons a day, but three engines only are kept working at the same time. The regular working capacity of the two sewers carrying the sewage from the pumps is put at 37·27 million gallons in the 24 hours, but for the year ending March, 1899, the daily average was 30·4 million gallons. This is estimated at 4,500,000 gallons less than the water-supply of the city, the balance of the water supplied going for road-watering, garden-watering, and the unsewered portions of the island. The sewage reaching the pumping station is said to be rather stronger than London sewage, and this is partly explained by the immense quantity of cattle kept in Bombay. The sewage having been pumped out to sea rises to the surface and spreads itself upon the sea water. When the tide turns the sewage is deflected towards the south and forms a distinct stream reaching Malabar Point at about low water. It is where this stream is passing south that the smells are complained of. Mr. Santo Crimp then discusses various remedies. He puts aside diversion of the sewage to Colaba or Malabar Points as too expensive. The use of electrolysed sea water is also put out of further consideration on account of the great cost of the necessary plant. It having been suggested that an additional outfall from the foreshore into deeper water might be made he points out that as the ebb tide sets towards the south more sewage and larger works would only increase the evil. Moreover, if further areas of the city were drained into this direction the outfall sewers would have to be enlarged. With reference to this outfall he suggests, therefore, that crude manganate of potash and sulphuric acid should be added to the sewage. It would not be necessary to employ it at all hours of the day but only to that volume of sewage which flows south at the turn of the tide. For the new scheme of drainage for the northern and north central portions of the city he suggests that the sewage should be discharged at Worlee Point. This is to be carried well out to sea and to be discharged only upon the first four hours of the ebb tide. The sewage would then not prove obnoxious. For the disposal of the sewage for the whole of Bombay when the works are all completed he suggests that for certain hours—viz., from the turn of the tide at high water to four hours after—all the sewage of the city should be discharged from Worlee Point. After this time it should be diverted to the present outfall at Lovegrove. It could then continue to be discharged until high water again when it might once more be diverted to Worlee. Thus one-third of the sewage of the city would be discharged at Worlee and the remainder at Lovegrove.

The Bombay Presidency is a most unfortunate one. Constantly afflicted with the plague during the past three and a half years it is now the seat of the greatest distress from famine. The two cities of Bombay and Poona have become

famous for the most intense forms of plague. Poona surpassed all previous records by its terrible mortality last August and now Bombay returns the highest death-rate it has ever known. For a city the average weekly mortality of which is 500 it will be seen that the 2637 deaths which occurred last week are a terrible record. This is a rate of over 167 per 1000 per annum. Of this great mortality probably 250 deaths occurred from small-pox. Ordinary diseases, especially those of the respiratory system, are said to be unusually prevalent, colds and coughs troubling nearly everyone. It will not probably be far wrong to estimate the past week's mortality from plague at 1600, although the official returns only give 569. It is said that numerous cases occur in which both plague and small-pox have attacked the same person, the condition of the patient being then pitiable in the extreme.

For the whole of India the deaths from plague rose from 1869 to 2137. In Bengal the disease is fast spreading, and a fresh outbreak is developing in Calcutta. Patna recorded no less than 675 deaths and for the city of Calcutta there were 106 deaths. Since the returns were published the disease has still further increased in Calcutta and there are now from 25 to 30 deaths occurring daily. An increase of plague is also reported from the Punjab, within the Jullunder district.

In view of this increase of plague in several parts of India it is interesting to recall the great powers possessed by local governments through the Epidemic Diseases Act of 1897, but which, admittedly of the greatest value if properly enforced, cannot be carried out in India. The attempt to do so has miserably failed everywhere and has led to a most lamentable spirit of antagonism. Dissatisfaction, sedition, and panic have invariably followed. By slow degrees the enforcement of the harsher regulations has been dropped and even the milder measures are only imperfectly carried out. At the present moment the only machinery really existing is that which the Venice Convention insists upon. The consequence is that it is impossible to say how many deaths from the epidemic are now taking place. The Government apparently can do nothing. All depends upon the action of the people and their native leaders.

Feb. 15th.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*Women Students and the Manchester Royal Infirmary.*

AT the meeting of the Board of Management of the Manchester Royal Infirmary held on Feb. 26th, a letter was received from Dr. Hopkinson, Principal of Owens College, acknowledging the receipt of a communication from the House Committee as to the admission of women students from the College to the hospital practice at the infirmary on the same terms as men except to the surgical out-patient department. In it he said the Council of the College were glad to know "that such students will now by the joint action of the College and of the Royal Infirmary be able to obtain satisfactory qualifications for the medical profession in Manchester." 50 years ago such a step as this would have been considered absolutely shocking; now it comes as a matter of course. Sir J. W. Maclure, Bart., M.P., said he had the greatest confidence that the new arrangement would be beneficial to society and to the infirmary itself, but he thought it a very prudent course that the exception had been made as to the out-patients.

*Inspection of Food in Manchester.*

The enormous waste of food constantly going on is not very often brought to mind, but the report of the Markets Committee to be presented to the City Council gives some impressive figures. In 1899 under the head of "meat and fish" 177,822 lb. were condemned and destroyed, and of "fish" 147,996 lb. 11,307 head of game, rabbits, poultry, &c., were confiscated, besides a large quantity of small fruits. The same thing is, no doubt, going on in every town, large and small from London downwards throughout the whole country. The money loss must be very great and the utilisation of all this food would cheapen existence. There is evidently plenty of scope for the discovery and use of innocuous methods of food preservation.

*Ladies' Sanitary Work.*

Among the more interesting examples of work in aid of the prevention of disease in Manchester is that of the Ladies' Health Society and the Ladies' Society for Visiting the Jewish Poor, which is carried out under the sanction and direction of the medical officer of health. It is a good illustration of the coöperation of voluntary philanthropic effort with that of the constituted authorities. The former of the two societies deals with a larger population and a wider area than the latter, for though the number of poor Jews in Manchester is considerable they chiefly live, as is their custom, in what is truly the Jewish quarter of Red Bank and Strangeways. The health visitors have made 8631 inspections of houses in the course of a systematic house-to-house visitation during the last quarter. When met with dilapidation of the houses, dirt, overcrowding, and sickness are reported to the health office. It is remarkable how much variation there is in adjoining districts. Four per cent. of the houses were dilapidated, but in one district, that of West Hulme, the proportion rose to 24 per cent. 12 per cent. of the houses were dirty, but in East Hulme the proportion was 38 per cent., while in Central Hulme only 0·1 per cent. was reported as being dirty. Birds of a feather still bear out the adage and continue to flock together. It is curious that while in the Jewish quarter of Red Bank 9 per cent. only of the houses had sick inmates, in the Gentile district of West Ancoats the percentage of houses with cases of sickness was no less than 44. It can scarcely be assumed that the cleanliness of the Jews in Red Bank greatly outshone that of the dwellers in Ancoats—though both might be improved—and the explanation must be sought probably in their religious ceremonial customs and possibly in their racial peculiarities. Temperance in the use of alcohol will no doubt be found more frequently in Red Bank than in Ancoats. The health visitors distributed no fewer than 8471 leaflets on (1) the prevention of diarrhœa; (2) the prevention of consumption; (3) precautions against measles; (4) precautions against whooping-cough; (5) suggestions to householders; and (6) how infants should be fed. A supply of disinfecting powder was left at 8028 houses, several hundredweight of soap were sold—no doubt at a cheap rate—dry lime and brushes were given, and during the quarter the tenants were induced to cleanse and whitewash 2029 rooms, closets, yards, and the like. 102 neglected children were found and looked after, while 993 families were helped in various ways, such as in regard to the care and treatment of children and as to food and clothing. This work is so good that the only regret is that it merely touches the surface of the mass of ignorance, idleness, vice, and poverty that lies festering in our midst. More help is needed both in workers and in means before this mass can be inter-penetrated and leavened into wholesome life.

March 6th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Royal Edinburgh Asylum.*

THE statutory annual meeting of the corporation of the Royal Edinburgh Asylum for the Insane was held on Feb. 27th, the Lord Provost of Edinburgh presiding. The managers' report for the year 1899 stated that the ordinary revenue amounted to £54,993 2*s.* 6*d.* and the ordinary expenditure, including interest, to £50,133 15*s.* 9*d.*, leaving a surplus of £4859 6*s.* 9*d.* From this surplus the sum of £1703 13*s.* had to be paid as the annual instalment toward the liquidation of the debt on the West House. Of the free surplus £3252 13*s.* 8*d.* was derived from Craig House and Myreside, and from intermediate patients £8 13*s.* 4*d.*, amounting together to £3261 7*s.* There was a deficit of £417 13*s.* 3*d.* on the receipts on behalf of patients at the lowest rate of board and patients maintained at the expense of the parochial authorities. In the managers' report for 1898 it had been intimated that the pauper rate of board was to be raised from £31 to £32. The managers greatly regretted to have to report that the increase of 20*s.* had not been sufficient to meet the expenditure and that therefore they had no alternative but to recommend that the rate of board for pauper patients should be raised to £33 per annum from April 1st. During the year there had been a decrease in the cost of provisions, but a large increase on the cost of fuel, an increase under the head of attendants'

wages, and a decrease in the value of labour performed by pauper patients. There would be no change in the rate of board for intermediate patients, which was now £42 per annum. During the year 1899 the sum of £2968 4*s*. 6*d*. had been expended on New Craig House, and on the West House the sum of £1479 0*s*. 10*d*., principally in connexion with a new sewerage system. The indebtedness of the corporation on Craig House and the West House together at the end of the year 1899 was £111,655 9*s*. 11*d*. The managers recorded their sense of obligation to Dr. T. S. Clouston for his untiring labours to promote the interests of the institution. In moving the adoption of the report the Lord Provost, after referring to the honourable work carried on by the institution and the satisfactory nature of the report for the year, went on to make some remarks on charities in Edinburgh. He thought that there were too many of these and he was of opinion that the number should be much decreased by uniting some of them. He regretted to say that a number of these charities published no accounts, and he thought that citizens could do much by refusing to subscribe to such charities as were conducted on these methods. The report of the Charity Committee showed that through the agencies of the Charity and Bevan Funds the sum of £675 9*s*. 11*d*. had been expended during the past year in supplementing the boards of 60 patients, most of whom would otherwise have been classed among the pauper patients. The report of Dr. T. S. Clouston, physician superintendent, stated that the total number of patients in the asylum on Dec. 31st was 912, including nine on probation. The admissions during the year had been 428, of whom 212 were men and 216 women. The total number of patients under treatment during the year was 1373. The admission of private patients who paid the lower rates of board had to be restricted as there was not sufficient accommodation in the West House for that class. There had been no special peculiarity in the causes or characters of the new cases of the year. Alcoholic excess had been the cause of insanity in 25½ per cent. of the cases, this being almost exactly the same proportion as in the preceding five years. He wished that he could report even the beginning of an improvement among the population in this matter. It was precisely those men and women to whose brains alcohol was most dangerous who took it to excess. The persons most apt to acquire the craving for alcoholic liquors were the nervous, the weak, those predisposed to insanity, and persons living sedentary lives or lives of dulness and monotony. If sturdy and vigorous out-door workers only took alcohol in excess it might do them much harm, but there would not be such a large proportion of them thereby rendered insane. There were few persons who had had an opportunity of studying the effect of alcohol on the brain who would not heartily approve of most of the recommendations of Lord Peel's Commission which had recently been published. The Inebriates Act (1898), touching as it did the pressing question only in its criminal aspect, had done very little good and excited very little interest. If there was to be legislation on that subject let it be effective. He thought some of their legislators had become victims of the monomania of fear and suspicion in connexion with this matter. From the arguments put forward against such legislation one might suppose that no remedy could be devised for this crying evil without endangering the liberty of the subject and the British constitution itself. With regard to the causation of mental disease it was a fact little realised that purely moral and mental causes played a comparatively small part as compared to bodily and physical causes. In only 11½ per cent. of cases in which the cause was known had trouble and anxiety, worry, or mental shock produced the disease. The remainder of the cases were due to such causes as drink, faulty development, gross brain diseases, strong hereditary disposition, child-bearing, and similar bodily causes. The recent epidemic of influenza had caused more cases of insanity than all the public and private anxiety in connexion with the war. With regard to the question as to whether insanity was increasing, he agreed with the verdict of "not proven" which had been given by the most competent recent investigators. There were, he believed, only two great methods to lessen the great nervous disturbances in civilised societies—viz: (1) to live according to physiological and moral law, and (2) to arrange suitable marriages, and even with these methods in operation it would take many generations to effect any great change. Dr. Clouston then referred to the question of phthisis in asylums. Formerly the phthisis-rate in the Royal Edinburgh Asylum had been a very high one, now it was well below the average. In the last report of the Scottish Commissioners in Lunacy special attention was directed to the question of isolation wards for phthisical patients and he thoroughly agreed with all that had been said in that report. An isolation block would by-and-by have to be provided in the West House. In Craig House they had, so far as he knew, no phthisical patients. Votes of thanks to Dr. Clouston and to the Lord Provost terminated the proceedings.

*Faculty of Physicians and Surgeons of Glasgow.*

On the evening of March 3rd the Faculty of Physicians and Surgeons of Glasgow gave a professional conversazione to the members of the profession in Glasgow and the west of Scotland in celebration of the tercentenary of their incorporation. There was a large response to the Faculty's invitation, the various rooms being crowded in the course of the evening. The company were received in the large hall by Dr. Hector C. Cameron, President, and the members of the Council. At 7.45 the President in a brief address explained the occasion of the gathering and gave a cordial welcome to the members of the profession present, who included a number of medical ladies. Sir William Gairdner followed with a few sentences of congratulation to the President, in which he made pointed reference to the distinction he had acquired as a surgeon, more especially with reference to the history of antiseptic surgery. In the various rooms demonstrations were arranged with the projection microscope, lantern, &c. Dr. John Macintyre and Professor Magnus Maclean gave a number of physico-electrical demonstrations illustrative of skiagraphy, phonography, and wireless telegraphy. In other rooms were displayed specimens of new drugs, pharmaceutical preparations, and surgical dressings by Mr. John Macmillan; Messrs. Weiss and Sons and Messrs. C. Ash and Son, Limited, of London, gave exhibitions of surgical and dental instruments; while in various corridors there was a large collection of medical portraits and prints and articles of archæological and artistic interest.

*Academic Honours to Medical Men.*

Among the six gentlemen to whom the Senatus of Aberdeen University offer the honorary degree of LL.D. at the next graduation are Dr. John Mitchell Bruce, M.A., of London, and Surgeon-Major David Prain, I.M.S., M.A., of Calcutta. The career of Dr. Bruce, who graduated M.A. at Aberdeen in 1866 and subsequently proceeded to the degree of M.D. of London University, is too well known to need mention. Surgeon-Major Prain graduated as M.A. at Aberdeen in 1878 with honours in natural science, and as M.B. in 1883 with highest honours, subsequently becoming M.D. He afterwards gained the highest place in the competition for the Indian Army Medical Service, and was appointed curator of the Calcutta Herbarium. On the retirement of Sir George King two years ago he was elected director of the Botanic Gardens, Calcutta. Surgeon-Major Prain has made numerous valuable contributions to the literature of botany.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Irish Hospital in South Africa.*

LORD IVEAGH has received a telegram informing him that his hospital had arrived at Cape Town all well and had been ordered to Naauwpoort. Sir William Thomson telegraphed that the whole staff arrived well and in good spirits.

*The late Mr. Wheeler.*

A portrait of the late Mr. W. I. Wheeler has just been presented to the Lady Superintendent of the City of Dublin Nursing Institution by the past and present nurses of the staff.

*The Legal Position of the Medical Officers to County Infirmaries in Ireland.*

A legal decision of great interest to medical men has just been pronounced by the Court of Queen's Bench in Dublin. The argument occupied some days and were sustained on each side by lawyers of the foremost position. The facts of the case as stated were briefly as follows. About 18 months ago, just as the new county councils were being installed, Mr. William G. Jacob was unanimously appointed

surgeon to the Queen's County Infirmary at Maryborough, in succession to his father, who had been for years a well-known physician in that district. After about a year the legality of his appointment was questioned and the new electing body—consisting under the Local Government Act (1898) of a joint committee, 15 being members of the county council and nine being nominated by the old governors—decided by a small majority that Mr. Jacob had never been formally or legally given the appointment, and they in fact by vote dismissed him, declaring the post of surgeon to the County Infirmary vacant. Dr. John Blaney of Dublin became one of the candidates for the position and was elected by a majority of one. At this stage the legal question became prominent and Dr. Blaney, who was then and is now acting as surgeon to the infirmary, was soon requested by a mandate from the Queen's Bench to show cause why Mr. Jacob should have been dismissed and why he himself should have acted as surgeon to the infirmary. After hearing the arguments the judgment of the court was reserved. It has just now been pronounced and it is of importance, the Lord Chief Justice, Mr. Justice Gibson, Mr. Justice Madden, and Mr. Justice Kenny presiding. Judgment was delivered by the Lord Chief Justice, who said that it was the contention of the plaintiff, Mr. Jacob, that the committee had no power arbitrarily to dismiss him without cause or unless they could show neglect of duty on his part. He contended that the tenure of his office was during good behaviour and that accordingly he could only be dismissed for cause, and that as he was dismissed without cause he was entitled to be reinstated. Looking to the language of the Act, however, he (the Lord Chief Justice) was clear that the meaning and intention of the Legislature was that the appointment should be during pleasure only and not during good behaviour. His lordship referred to the judgment of Chief Justice May in which he used the following words: "The surgeon of an infirmary is merely the paid servant of the governors who receive a salary for his services. The governors may dismiss him at any time arbitrarily." His lordship concluded an elaborate judgment by expressing his high opinion of Mr. Jacob and stating that the legal question prevented their giving him "the redress he sought." The other judges concurring, the application was refused with costs. The decision will have the effect of putting a great deal of power into the hands of the new and almost untried county councils of Ireland. In the above case there does not seem to have been any objection to Mr. Jacob, except that a prominent local Nationalist medical man was preferred by some of the electors, but it is interesting to note that he failed to be the successful candidate.

*The Ulster Medical Society.*

A meeting of this society (which was very largely attended) was held in the physiological department of Queen's College on March 1st.—Dr. Lorrain Smith gave a demonstration of Haldane's Method of estimating the Oxygen-carrying Power of Blood by Ferro-cyanide of Potassium and an account of observations on anæmia with demonstration of the method employed. The latter paper was of great interest and of original research. It was based on a series of cases observed at the Royal Hospital as well as on three private cases placed at Dr. Lorrain Smith's disposal by members of the medical profession.—Dr. C. Kevin, Professor J. W. Byers, Professor J. A. Lindsay, and Dr. A. Dempsey took part in the discussion which followed.—Dr. Lorrain Smith showed a series of Pathological Specimens of very varied nature.—Professor W. H. Thompson read a paper on Degenerations resulting from Lesions of the Temporal Lobe, which was discussed by Dr. P. Redfern and Professor J. Symington.—Professor J. Symington and Dr. J. Tennant displayed and demonstrated a series of specimens (sectional) illustrating the Anatomy of the Female Pelvic Viscera, and Professor Symington and Dr. J. Craig showed a series of specimens of pathological interest obtained from the dissecting-room and specimens showing the Topographical Anatomy of the Mammary Gland in Nulliparæ.

*The Proposed New Infectious Diseases Hospital.*

The Public Health Committee of Belfast, seeing that it is impossible to carry out the Notification of Infectious Diseases Act without the establishment of a special hospital for the treatment of zymotic cases, have decided to recommend the erection of one, a course of action approved of by the medical inspectors of the Local Government Board. They are of opinion that such an hospital should be erected on the Purdysburn estate, authority for the construction of which has already been given by the City of Belfast (Hospitals) Act, 1898. They recommend that this hospital should be constructed in pavilions of about 20 beds each, with a total of about 150 beds, with administrative, washing, disinfecting, and ambulance arrangements, and a special pavilion and separate accommodation for the isolation and treatment of small-pox cases, and they estimate the cost of constructing and maintaining this hospital as follows: cost of building and furnishing complete 150 beds at £300 per bed, £45,000; annual outlay for 40 years on a 3 per cent. basis sinking fund and interest, £1950; cost of maintaining 150 beds at £40 per bed per annum, £6400. That such an hospital is needed, and, indeed, most urgently required, in a large city like Belfast, where accommodation for infectious diseases is very meagre, is admitted by everyone, but apparently, judging by what occurred at the meeting of the city council on March 1st, there is a difference of opinion as to the proper site. A large deputation of medical men appeared beforet he council appointed at a specially-called meeting of the medical profession on the previous day, and stated that they now again endorsed a memorial passed by a number of medical men in 1897, and presented at that time to the Lord Mayor and council protesting against the Purdysburn site. In this memorial it is stated that the transference of fever patients for a distance which would vary from two or three to seven or eight miles would be dangerous to the more serious cases, would in all probability aggravate the severity of the attack, and prejudice the patients' prospects of recovery. A hospital should be near enough to permit of daily inquiries being made and to render possible the prompt summoning of friends in case of urgent danger suddenly arising, as frequently occurs in fever cases. It was also urged that the medical service would be more costly at such a distant place and that the distance from Belfast would interpose much difficulty and delay in obtaining additional medical advice in cases of urgent danger. Further, such an hospital would be unsuitably placed for the purposes of the training of medical students. Believing, then, that a hospital at Purdysburn would involve needless risk of life, would entail serious hardships upon the working classes in their relations to their sick relatives, would create much discontent and friction in the administration of the Notification of Infectious Diseases Act, would subject the ratepayers to unnecessary expense, and would prejudice the cause of medical education in Belfast, the memorialists prayed that the proposal should be reconsidered and some convenient and more accessible site be selected. The deputation, who suggested as a suitable site the grounds of the old asylums in Grosvenor-street, having been heard the matter afterwards was discussed in the council. The chairman of the Public Health Committee (Dr. Alderman Graham) said he regretted that one greatly favourable site for the Infectious Diseases Hospital could not be obtained near the city, but he regarded the Purdysburn situation as the most suitable one for such an institution. He stated that, as regarded the question of distance, the most recently constructed hospitals in the kingdom occupied sites no nearer the cities than Purdysburn was to Belfast. He gave as examples, Glasgow, Manchester, Newcastle, Nottingham, Bristol, and Leeds. The corporation seemed to be much divided and the chairman of the committee of the new asylum, which is situated at Purdysburn, protested against putting at Purdysburn an infectious diseases hospital as nothing should be done to deteriorate or destroy the effect of the future asylum. An amendment to refer matters was defeated (14 voting for and 24 against) and the motion to adopt the report of the Public Health Committee and to go on with the erection of the infectious hospital at Purdysburn was carried. One of the medical members of the corporation voted against the site at Purdysburn, while six voted in favour of it. It is expected that the erection of the new fever hospital at Purdysburn will be begun at once.

*Health of Belfast.*

Between Jan. 21st, and Feb. 17th, 1900, 200 cases of zymotic disease have been notified, and of these 57 were scarlet fever, 48 typhoid fever, 34 erysipelas, and 22 diphtheria. The death-rate was 26·1. There is no doubt that there is a widespread epidemic of mild scarlet fever, but the type of the disease is not severe and no deaths have been reported. Nearly one-half of the deaths from zymotic diseases was due to whooping-cough. While influenza has been prevalent the

mortality has been low. Indeed, the general death-rate of the city has been below the average of the large towns of Ireland.

March 6th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Disinfection after Measles.*

AT the meeting of the Academy of Medicine held on Feb. 20th M. Vallin laid great stress upon extending the regulations as to disinfection so as to include measles. In 1895 disinfecting operations were undertaken in 38,000 cases and during 1898 in 63,000, being mainly cases of notifiable disease. In the case of measles disinfection is hardly ever asked for or carried out and thereby exists a very real danger. Measles is far more infectious than is generally believed; instances are even known of persons who have contracted the disease from brushing the clothes worn by a patient suffering from measles. In any case if it is important to destroy the actual measles germ it is equally important to destroy those of the diseases which so often complicate measles—as, for instance, those of broncho-pneumonia. In M. Vallin's opinion measles should at once be added to the list of those diseases in which disinfection is absolutely necessary.

*The Fraudulent Supply of Diseased Meat.*

The police of Paris have just laid hands on a vast fraudulent organisation for evading the precautionary measures drawn up by the authorities for inspecting the meat distributed for consumption in the suburbs of Paris. Both for Paris and the suburbs all animals destined for food have to be killed in public slaughter-houses, where the strictest watch is kept by the municipal veterinary surgeons, who forbid the delivery to the butchers of any meat which exhibits the slightest suspicious signs. Elaborate regulations have been laid down as to the various diseases which render meat unfit for the food of man, and naturally enough tuberculosis is the complaint most rigorously watched for. The swindlers who have been arrested made up a vast organisation which used to buy up from the farms of the eastern provinces and even in Germany such animals as, owing to disease, would have been refused for slaughter at the abattoirs and, moreover, they bought them dirt cheap. These animals were then conveyed in regular herds to a small place near Paris and killed in sheds built at the bottom of an old quarry. Under cover of night the meat was taken away by the accomplice butchers and re-sold in the various suburban shops. In connexion with this clandestine slaughter-house the firm had a kind of cemetery where those animals were buried the meat of which was too bad for even the swindlers to risk its sale in the market. Ivry was the place where the fraud was discovered and the official inquiry shows that the organisation was singularly complete. It is extraordinary that the slaughter-house, which was in full work, should never have attracted the attention of the villagers, but it must be remembered that all killing was done by night and that the slaughtermen were all Germans who did not understand a word of French and were therefore unable to engage in imprudent conversation with the neighbours.

*Tuberculosis and the National Convalescent Homes.*

The Minister of the Interior decided that from Jan. 1st, 1900, no tuberculous patient shall be received at the convalescent homes of Vincennes or Vesinet to which patients from the Paris hospitals are sent. The authorities of these homes are forbidden to receive any patient who does not bring a certificate bearing the words, "No sign of tuberculosis of the respiratory tract." This is a perfectly legitimate measure to take and had its inception in the fact that the population of a convalescent home is an admirable breeding ground for the tubercle bacillus, owing to the low powers of resistance and general feebleness of health shown by convalescents. The measure, however, carries with it as a corollary the erection of buildings for tuberculous patients who are gradually being more and more excluded from general hospitals. A proposal has been submitted to the Committee of the Chamber (*Bureau de la Chambre*) by M. Fleury-Ravarin, the deputy for the Rhône, with the object of creating a national Anti-tuberculosis Institute. It is intended to be a scientific establishment for the study of the treatment of tuberculosis and for experimental research into the various ways of curing this malady, which is responsible for 750,000 deaths annually in France alone and those mainly among the working classes. A large sanatorium which will receive patients free will shortly be opened in the Lyons district on the mountains of Bugéy. In the department of the Nord a subscription opened to found a sanatorium brought in on the first day 35,000 francs in donations after a meeting called by Professor Ausset. Finally, it is hoped that the large sanatorium which has been so many years building will be opened before long at Angerville under the auspices of the city of Paris.

*The Therapeutics of Cacodyle.*

Treatment by cacodyle, on which subject information has already appeared in THE LANCET,[1] was introduced by Professor Armand Gautier. A large number of physicians have made trial of it and it is now possible to arrive at a fairly exact estimate of the value of the treatment. A discussion took place at a meeting of the Society of Hospital Physicians, held on March 2nd, which was preceded by a paper communicated by M. Widal and M. P. Merklen, which followed a paper read by M. Dalché at the preceding meeting. M. Dalché was most optimistic; even when given as a pill the drug had produced no ill effects in patients except that their breath acquired a slight odour of garlic, neither had he ever noticed the occurrence of diarrhœa nor any uneasy feelings in the stomach. In two cases where the drug was given by injection one patient complained of pain. M. Dalché's patients were almost all tuberculous. Three were undeniably cured, in four their condition improved to a marked extent, especially as regards the way in which they put on weight, acquired more muscular force, and manifested greater renal activity. Two cases showed no particular results and two got worse, but they were patients far advanced in tuberculosis. Two patients who showed no signs of pulmonary tuberculosis but were suffering respectively from Addison's disease and cancer of the stomach derived no benefit from the treatment. M. Hayem preferred to give the drug by hypodermic injection rather than by the mouth, which was apt to produce gastric intolerance, or by the rectum, which method often gave rise to severe lumbar pains. M. Danlos also preferred the hypodermic method, not only because the drug thus administered was better borne but because by this means it was possible to give much larger doses, as much as 40 or even 80 centigrammes. As for cacodylate of sodium being transferred into the toxic oxide of cacodyle, he had never known such a thing to be absolutely demonstrated. M. Galliard had never seen any untoward results even with doses of 20 or 40 centigrammes given by the mouth. He was well satisfied with the drug in tuberculosis; the strength returned and the patient put on weight; there was, however, but little alteration in the pulmonary conditions. M. Widal and M. Merklen had used daily hypodermic injections in doses of from five to 10 centigrammes. In advanced cases of tuberculosis where there was much ulceration this treatment had not much effect, but in early cases the appetite rapidly improved and they considered that this method of treatment was an admirable adjuvant to other methods either therapeutical or hygienic. In leucocythæmia cacodylate improved the appetite and increased the strength but had not much effect on the general course of the disease. With regard to its effect on the blood careful daily observations showed but little difference in the white corpuscles, but the number of the red was largely increased. Professor Armand Gautier closed the discussion, in which M. Hirtz, M. Rendu, and M. Barth also took part, by insisting on the necessity of administering the drug solely by the hypodermic method unless it was desired to obtain poisonous effects from the breaking-up of the compound in the digestive tract.

March 6th.

## ROME.

(FROM OUR OWN CORRESPONDENT.)

*Post Nubila Phœbus.*

"A BUCKET or two of water whipped up into a cloud," says Tyndall, "will obscure the noblest mountain; but let the sun come out, and the cloud vanishes, leaving the mountain

[1] THE LANCET, Nov. 18th, 1899, p. 1408.

all the more prominent for its temporary eclipse." Continental critics—and their name was Legion—who saw in the initial reverses of the British arms the definitive triumph of the Boers have been giving point to Tyndall's illustration; and to do them justice, they spared no effort to drive it home. Never was the mythopœic tendency of journalism more characteristically in evidence than in the "news" hailing from Paris, from Brussels, from Munich, from Berlin—"news" as to British disasters of every kind and corresponding Boer successes. The Arkansas editor who would have dismissed Shakespeare from his reporting staff as wanting in imagination would have had no difficulty in "suiting himself" from the publishing offices of French, Belgian, or German newspapers; while the "pictures" in the illustrated press of these countries were equally remarkable for what (to put it mildly) I may call "creative power." Now, with a turn of the wheel, not of fortune, but of "manifest destiny," news and pictures alike have vanished like Tyndall's cloud or Shakespeare's "baseless fabric of a vision," leaving not a "wrack" behind but that of the Boer cause. Italy, as I have already shown,[1] from nearly the outbreak of hostilities kept her head, like Tiresias in the Shades—

*οἴη πέπνυται, τοὶ δὲ σκιαὶ ἀΐσσουσιν*
(She only wise, the rest like shadows flit)—

and in her steady pro-British attitude placed herself on a coign of vantage from which she can now enjoy the discomfiture of those "economists of truth" (to use King George III.'s phrase), her pro-Boer continental sisters. Except for her insignificant Socialist and Jesuit press (the "Red Devil" and the "Black Devil," according to Bismarck, always make common cause against real civilisation), except for the *Secolo* and the *Voce della Verità* (for instance), her printed comments on the campaign leave her nothing to apologise for or to retract, but, on the contrary, entitle her to the British gratitude conveyed through Lord Rosebery to her Foreign Minister, the Marchese Visconti Venosta. Her Red Cross organisation, moreover, distinguished itself honourably from that of other nations in its strict impartiality towards the belligerents—at least, the world heard of no agents of hers in that capacity giving active help or supplying information or war material to the Boer army. I refer to all this, little germane as it may seem to medical correspondence, because I have had frequent occasion to be very plain-spoken as to Italy's backwardness in public hygiene and in medical education and as to the policy of some of her professional men towards the British-American practitioner in her winter cities. But where I can honestly give praise to her I never withhold it—certainly not at present when her demeanour towards the British cause has been loyal even to cordiality and when she is reaping the fruit of it by attracting, at the expense of her Anglophobic neighbours, the ever-welcome English-speaking sojourner.

### *Public Health on the River Plate.*

Italy is in close touch with the Rio de la Plata, thanks to her very numerous compatriots in Uruguay and the Argentina, and among the advices that reach her not only by every mail but almost daily by telegraph from those regions the public health fills a large and interesting place. Their summer corresponds to the Italian winter and both, in either latitude, have been exceptionally severe. From Montevideo, it is announced, the heat has been as much as 38° C. in the shade every afternoon and there has been quite extraordinary drought, even to menacing the ruin of the crops and the destruction of cattle. While the public health in Uruguay has been excellent, especially at Montevideo, where the bathing season has attracted many visitors from the neighbouring communities, it has in the Argentina been very much the reverse, pestis bubonica having appeared in force at Rosario di Santa Fè, the second city of the Republic, and having seemingly effected a foothold in Buenos Ayres itself. On Jan. 27th Rosario was isolated by a sanitary cordon, railway traffic was suspended, and communication by river was subjected to a ten days' quarantine. The bubonic infection is considered to have come from Asunción in Paraguay where the pestis has been epidemic for several months. At present the number of patients isolated amount to 11, and although the population keeps tranquil the almost total arrest of business causes grave commercial and economic difficulties. In Rosario itself it is stated that a whaler having a cargo of grain in which a multitude of plague-stricken rats were burrowing imported the disease, the first case having declared itself in a mill to which the grain was sent and the first victim being a porter of the establishment who helped to unload the cargo. Subsequent reports announce the cases at Rosario as reaching from eight to ten per day, while in Buenos Ayres they vary from four to five. In both cities Government and municipality alike have at their disposal every resource for circumscribing and overcoming the invader and are utilising it so energetically that they soon hope to register a clean bill of health. Uruguay immediately on the facts becoming known established a ten days' quarantine for all arrivals from Rosario and a five days' quarantine for those from Buenos Ayres and is reaping the reward of its vigilance in its excellent sanitary conditions, though from the west and from the east it was exposed to the unwelcome visits of a steamship with cases of beri-beri and yellow fever on board and of a liner hailing from Rio and Santos, also carrying patients suffering from the latter disease.

March 4th.

[1] THE LANCET, Dec. 23rd, 1899, pp. 1750-1.

# Obituary.

## THOMAS SCATTERGOOD, M.R.C.S. ENG., L.S.A.

MR. THOMAS SCATTERGOOD of Park-square, Leeds, who died somewhat suddenly on Feb. 22nd, had for many years been one of the foremost representatives of the medical profession in that city. At the time of his death he had just completed his 74th year, having been born on Feb. 14th, 1826, in Huddersfield, where his father, the Rev. Thomas Scattergood, of the Methodist New Connexion, was stationed. His professional education was commenced at the medical school of Newcastle-on-Tyne and continued at the Leeds Medical School until he became qualified in 1850 as M.R.C.S. Eng. and L.S.A. He soon established himself in practice in Leeds, and having at a comparatively early period of his career acquired a reputation as a toxicologist and medical jurist he was called upon to give evidence in several cases of criminal poisoning, one of the most celebrated being that of Mary Ann Cotton, who was suspected of having poisoned 16 persons and was executed at Durham in 1873 for the poisoning of her own child. Mr. Scattergood's most important work was done in connexion with the Leeds Medical School and Yorkshire College, and is well epitomised in the following paragraphs of a resolution of the Board of Medicine passed on the day after his death:—

"The members of the Board of Medicine of the Yorkshire College desire to place on record their sense of the irreparable loss which the School of Medicine has sustained by the death of Mr. Thomas Scattergood, who for 55 years had been intimately connected with the school, first as a student, then as lecturer in chemistry, and afterwards as lecturer in forensic medicine, and who had also held the office of dean from the time of the union of the school with the college in 1884 until his death. ..... His discretion, tact, and clearness of vision were invaluable in the negotiations which led to the union of the school with the college. His activity and success in raising funds for the endowment of the chair of Physiology enabled the department of medicine to enter upon its new career with an important improvement of the staff. And a few years later his enthusiasm, his faith in the future, and his firm determination to better the conditions of medical education mainly led to the rebuilding of the school."

One of his medical colleagues, writing in the *Leeds Mercury* of Feb. 27th, says:—

"He had been actively connected with the Leeds School of Medicine for nearly 50 years, being almost the last survivor of those who formed the lecturing staff of the old Medical School in East Parade, and was present at the opening of the newer building in Park-street in 1865 by Sir James Paget. ..... It was in the long and tedious negotiations preparatory to the amalgamation of the Medical School with the Yorkshire College that the splendid qualities of Mr. Scattergood were seen to the greatest advantage. He acted as chairman of the building committee of the present handsome school in Thoresby-place, and without exaggeration it may quite fairly be said that it is a permanent memorial of him."

To mark their sense of the great services rendered by Mr. Scattergood his colleagues and some private friends had

decided a few months ago to have his portrait painted by Sir George Reid, ex-President of the Scottish Academy. At the time of his death the portrait was, fortunately, nearing completion, so it is hoped that the medical department of the Yorkshire College will have a permanent memorial of one who in his own unostentatious way never wearied of advancing its interests. The funeral took place at the Lawnswood Cemetery on Feb. 28th in presence of a large and sympathetic assemblage. The service was conducted by the Rev. Charles Lemoine, pastor of the East Parade Congregational Church, of which Mr. Scattergood had been a member since 1853 and had also for a long time been one of the deacons.

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### THOMAS GUY, M.D. HEIDELB., F.R.C.P. Lond., M.R.C.S. ENG.,

INSPECTOR-GENERAL OF ARMY HOSPITALS (RETIRED).

INSPECTOR-GENERAL GUY, who died at his residence in Pencester-road, Dover, on March 2nd, may be said to have belonged to a medical family, for his father and grandfather were medical men, and the late Dr. William A. Guy, F.R.S., was his brother. Thomas Guy was born at Chichester in 1819, studied medicine at Guy's Hospital, and was admitted M.R.C.S. Eng. in 1840. In 1841 he graduated as M.D. of Heidelberg University and in 1842 he entered the army as assistant surgeon. His subsequent steps were surgeon in 1853 and surgeon-major in 1862. He served throughout the Abyssinian campaign of 1867-68 as superintendent of hospital ships, was principal medical officer of the European troops at Zoulla, the British base on the Red Sea, was mentioned in despatches and promoted to be deputy-inspector-general of hospitals in 1868, and received a medal. He retired from the service in 1872 with the honorary rank of inspector-general. In 1859 he was admitted M.R.C.P. Lond., and in 1878 became a Fellow of the College. In 1870 he translated from the German Professor Esmarch's treatise on "The First Dressing of Wounds on the Battlefield," and during the Franco-German War he acted as director of the English ambulance.

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### WILLIAM MCNEILL WHISTLER, M.D. PENNS., M.R.C.P. LOND., M.R.C.S. ENG.

DR. W. MCNEILL WHISTLER, physician to the London Throat Hospital, and brother of the well-known painter, died at Bickenhall-mansions, Gloucester-place, on Feb. 27th, aged 63 years. His medical education was received at the University of Pennsylvania where he graduated as M.D. in 1860. During the American Civil War he served as an assistant surgeon in the Confederate Army and on the conclusion of hostilities came to Europe where he resumed medical study in Paris and at St. George's Hospital, London. Intending to practise in England he took the diplomas of M.R.C.S. Eng. in 1871 and M.R.C.P. Lond. in 1876. Dr. Whistler was formerly physician to the Hospital for Diseases of the Throat and Chest, and Honorary Physician to the National Training School for Music. He was a member of a number of medical societies in England, France, and America, and had been President of the British Laryngological, Rhinological, and Otological Association. Dr. Whistler published "Lectures on Syphilis of the Larynx: Lesions of the Secondary and Intermediate Stages." In addition to being author of articles in the "New York Archives of Laryngology" and in Quain's "Dictionary of Medicine," he contributed several papers to THE LANCET and other medical journals.

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### ROBERT GOLDSWORTHY TUCKER, M.R.C.S. ENG., L.R.C.P. EDIN.

MR. TUCKER, who died at his residence in Southend, Essex, on Feb. 23rd, was formerly in practice in Farningham and Swanley where he was for nearly 20 years one of the best-known and most esteemed members of the community. He was the son of a well-known surgeon who was himself the first to pass the then new examination for the Fellowship of the Royal College of Surgeons of England. At St. Bartholomew's Hospital, where he received his medical training, he excelled greatly, not only in his professional studies, but also in physical exercises. In 1873 he became qualified as M.R.C.S. Eng. and L.R.C.P. Edin., and in the following year he took a share in the practice of Messrs. Ashurst, Tucker, and Smith, at Farningham, Kent. About 1887 he removed to Swanley Junction, a new and rapidly increasing place, where he made for himself a separate and extensive practice. He became surgeon to the St. Bartholomew's (Kettlewell) Convalescent Home, to the Swanley Little Boys' Home, to the Swanley Horticultural College, as well as to the railway staff, and he also filled several other local offices. In May, 1897, however, he decided, for family reasons, to dispose of his Swanley practice, and he removed to Southend-on-Sea, where he again quickly made his mark and where he died, at the early age of 47 years. The fatal result was due to pneumonia following an attack of influenza. As a medical man he was kind and attentive. His memory is widely and deeply cherished by his former patients whose confidence he possessed to a rare degree and whose sympathy followed him to the end. His funeral took place on Feb. 27th at Prittlewell, near Southend.

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DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. Cargill Shaw, Professor of Neurology in Long Island College, Brooklyn.—Dr. Emile Blanchard, Professor of Zoology in Paris.

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# Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The following gentlemen passed the First Examination of the Board in the subjects indicated:—

*Chemistry and Physics.*—Bertram Raleigh Bickford, Charing Cross Hospital; Robert Daniel Bridger, Guy's Hospital and Birkbeck Institute; John Braybrooke Binns and Edward James Cooper Smith, St. Bartholomew's Hospital; Patrick D. McIvor Campbell, St. Mary's Hospital; Francis William Cooper, Guy's Hospital; Owen Cunningham P. Cooke, Malcolm Ogden Cruickshank, Harry W. Beresford Danaher, and John Burnaford Dunstan, London Hospital; John Rees Davies, University College of South Wales, Cardiff; Robert Deane, University College, London; George Fanning Denning, Charing Cross Hospital; Kenneth A. Crawford Doig, Westminster Hospital; Arthur Melville Dowdall, University College, Liverpool; George Bennicke Edwards, London Hospital; Harry Arthur Fenton, Stephen Field, and Walter Taylor Finlayson, St. Mary's Hospital; Charles Breame Fowler, Charing Cross Hospital; John Alan Campbell Greene, Guy's Hospital; Kenneth George Haig, Oxford University; George Wykeham Heron, Westminster Hospital; Mark Oliver Hunter, St. George's Hospital; William Hayward Hamilton and James Reginald Kemp, St. Bartholomew's Hospital; Charles Frederic Kernot, Cambridge University and London Hospital; John Lascelles, St. Mary's Hospital; Idris Naunton Morgan, University College of South Wales, Cardiff; Charles Sculthorpe Morris and Maurice John Mottram, Guy's Hospital; Farndon Groom Mountain, St. Bartholomew's Hospital; Hamish Nicol, Westminster Hospital; Robert Woodall O'Dowd, Mason College, Birmingham; William Stewart Orton, Guy's Hospital; Christopher Parker, Westminster Hospital; Edward Campbell Pope, St. Paul's School, West Kensington; Ronald Holt Preston, St. Mary's Hospital; Ralph Raby and Leslie Rawes, St. Thomas's Hospital; George Hooper Rains, Clifton Laboratory; Alfred Ernest Rowlett, Guy's Hospital and Wyggeston School, Leicester; Herbert Bodley Scott, St. Bartholomew's Hospital; Francis George Snoad, Mason College, Birmingham; John Edmund Spiller, Guy's Hospital; John Douglas Staley, Owens College, Manchester; George Morley Arundel Thomas, University College of South Wales, Cardiff, Edinburgh University, and St. Mary's Hospital; Guy Tyrrell Verry, St. Bartholomew's Hospital; Bertram Joseph Wakley, and James Marsden Wall, St. Thomas's Hospital; William Arthur Weatherell and Solomon James Weinberg, Owens College, Manchester; Arthur Sydney Webley and Ralph Kuper White, St. Mary's Hospital; Stanley Martin Wells, Forest School, Walthamstow; Vernon Northwood Whitamore, Charing Cross Hospital; and Ernest Douglas Wolff, King's College, London.

*Practical Pharmacy.*—James W. Woodhams Adamson, St. George's Hospital; Robert Grenville Anderson, Guy's Hospital; Samuel Ernest Atkinson, Yorkshire College, Leeds; Harry Cecil Baker, St. Mary's Hospital; Charles John Battle, St. Thomas's Hospital; William Nichols Blachford and Richard Osmond Bodman, University College, Bristol; Isidore McWilliam Bourke, St. George's Hospital; George Brocklesby Davis, Cambridge University and London Hospital; Clarence Hamul Denyer, Guy's Hospital; Louis Cornelius Driscoll, Charing Cross Hospital; Harry Denny Duke and Herbert Wortley Fisher, London Hospital; Leonard Erasmus Ellis, St. George's Hospital; Edwin Wallace Goble, Guy's Hospital; John Leopold Goldstein, Arthur Hildebrand Jacob, Norman Bremer Vickers Jacob, George J. Williams Keigwin, and Andrew Macrae, London Hospital; Archibald Malcolm Mackintosh, St. Mary's Hospital; Paulin John Martin, Oxford University and St. Bartholomew's Hospital; William Charles Mence, St. Thomas's Hospital; Frank Morgan, Westminster Hospital; Stanley Parkes Mummery, St. George's Hospital; William L'Estrange Matthews and Robert Woodall O'Dowd, Mason College, Birmingham; John H. Le Bouverie Page, St. Mary's Hospital; Harold Thornbury

Palmer and Allen Pledger Piggot, Guy's Hospital; Percy George Pavitt, Middlesex Hospital; James Farquharson Powell, St. George's Hospital; George Russell Rew, King's College, London; Russell John Reynolds, private study; Herbert George Rickman, St. Mary's Hospital; Cyril Stephen Stokes Rigby, Mason College, Birmingham; Godfrey Faussett Rugg and Robert Spears, University College, London; Leonard Douglas Saunders, St. George's Hospital; Charles Newham Slaney, private study; John Salmon Smith, Middlesex Hospital; Eugene Dunbar Townroe and Frederick George Walker, St. George's Hospital; Walter Frederick Hamilton Vaughan and Hardy Vesey Wells, St. Mary's Hospital; Frank Edward Wavte, Owens College, Manchester; and Reginald Cameron Wilmot, St. Bartholomew's Hospital.

*Elementary Biology.*—Arthur Reginald Beaumont and Osborne Black, Guy's Hospital; Charles Murchison Bernays, St. Thomas's Hospital; Edward John Blewitt, London Hospital; John Taylor Bowker, Owens College, Manchester; Harold Clapham, St. Mary's Hospital; Francis William Cooper and Hugh Palliser Costobadie, Guy's Hospital; Harold G. Shackleford Courtney, St. George's Hospital; Harold Ernest Cribb, Charing-cross Hospital; Thomas Henry John Crookes, St. Bartholomew's Hospital; Arthur Humphry Curtis, University College, London; William Leonard Dickson, Middlesex Hospital; Harold Denny Duke, London Hospital; Hyacinth Lloyd Field, St. George's Hospital; Arthur George Finch and Charles Breame Fowler, Charing Cross Hospital; William Henry France, South-West Polytechnic Institute, Chelsea; John Stanley France, and John Alan Campbell Greene, Guy's Hospital; Percy Gully, Charing Cross Hospital; Charles Norman Hampson, Owens College, Manchester; Arthur Lewis Helser, Middlesex Hospital; Albert William Hill, Yorkshire College, Leeds; Walter de Marchot Hill, St. Bartholomew's Hospital; Samuel William Iles, Guy's Hospital; Walter Greig Jack, St. George's Hospital; Charles Frederic Kernot, Cambridge University and London Hospital; Cameron Lamb, Oxford University and Guy's Hospital; William A. Thomas Lloyd, George William Mason, and Echlin Storry Molyneux, London Hospital; Herbert Cecil Malleson, Birkbeck Institute; Eric Stewart Marshall, St. Bartholomew's Hospital; Charles Sculthorpe Morris, Louis Joseph Patterson-Clavier and Edward Crosby Peers, Guy's Hospital; John J. Papanicoly, James Wesley Peatt, and Geoffrey Ratcliffe Plaister, London Hospital; Vining Gedney Joseph Paul, St. Mary's Hospital; William Baly Peacock, King's College, London; Gordon Christopher Pounds and Charles Puxley, Charing Cross Hospital; Gerald Charles Frederick Robinson, Richard Pugh Rowlands, and John Edmund Spiller, Guy's Hospital; Harold H. Elborough Scatliff, Oxford University and St. George's Hospital; Timothy William Sexton, Middlesex Hospital; Harold Sigismund Sington and George Theodore Stephens, St. Thomas's Hospital; Charles Newham Stanley, The Science, Art, and Technical School, Plymouth; Nicholas Tarr and Harold Rosser S. Walford, St. George's Hospital; Gerald Maberly Taylor, London Hospital; Ingram Thomas Walker, St. Thomas's Hospital; and Theophilus Ralph Waltenburgh, Owens College, Manchester.

*Materia Medica.*—Alexander Farrington, Cambridge University and St. Bartholomew's Hospital; Kenneth Weldon Goadby, Guy's Hospital; and John May Herbert Munro, University College, Bristol.

UNIVERSITY OF CAMBRIDGE.—On March 1st the following degrees were conferred:—

*Doctor of Medicine*—J. A. K. Renshaw, M.A., Trinity College.

*Bachelor of Medicine and Bachelor of Surgery.*—C. H. Barnes, B.A., and W. T. Mullings, B.A., Christ's College.

*M.A. (honoris causâ).*—F. G. Hopkins, M.B., B.Sc. Lond., University Lecturer in Chemical Physiology.

Dr. Langley, F.R.S., has been appointed deputy for Sir Michael Foster, M.P., and will have charge of the Physiological Department till the end of the next academical year.—It is proposed to assign about £12,000 from recent benefactions for the erection of new buildings for pathology, pharmacology, and medicine. An additional sum of at least £20,000 will have to be found to provide adequately for the requirements of these departments and the University is still in need of further gifts to this end.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—The annual meeting of this institution was held on Feb. 19th under the presidency of Major Whitting. The medical report stated that 232 in-patients had been admitted, against 269 in 1898. The out-patients and casualties numbered 1353. The provident dispensary had 2332 members, an increase on the preceding year. The financial statement showed that the receipts amounted to £2250 and that a favourable balance of £233 remained.

THE LATE DR. J. BROOM.—Dr. John Broom died at his residence in Clifton on Feb. 26th in his fifty-eighth year after a short illness. The deceased gentleman received his medical education at the medical schools of Liverpool, Sheffield, and the London Hospital and qualified as L.R.C.P. Irel., and L.R.C.S.Edin. in 1870, three years later graduating as M.D. of Brussels University with distinction. Dr. Broom shortly afterwards commenced practice in Sheffield and in 1877 went to Clifton as partner with the late Dr. T. E. Clark, the partnership terminating in 1879. Dr. Broom had a large practice and was extremely popular amongst his patients. He allowed himself so little relaxation and holiday that his work told seriously upon his health during the last few years.

UNIVERSITY OF DURHAM FACULTY OF MEDICINE.—The Secretary of State for War having been pleased to avail himself of the powers conferred upon him by Royal warrant recently offered to the University of Durham three nominations to the Royal Army Medical Corps which have been filled by the appointment of the following gentlemen:—Mr. James Andrew Hartigan, Mr. Charles S. Smith, and Mr. Harold Ben Fawcus, all of whom are graduates in medicine and surgery of the university. Surgeon-Captain Wresford who accompanies the South African battery of the 1st Northumberland Volunteer Artillery, and Surgeon W. L. W. Walker, who has been attached to one of the South African companies of the Northumberland Yeomanry, are also graduates of Durham. Of the present and former students of the University of Durham College of Medicine eight have volunteered for service in South Africa and are either at the front or on their way there.

ROYAL FREE HOSPITAL.—The seventy-second annual court of the governors was held at the hospital in Gray's Inn-road, W.C., on Feb. 28th, the Earl of Stamford presiding. In moving the adoption of the report Lord Stamford remarked that the work of the hospital had been carried on in the most efficient manner during the past year. 2117 patients had been treated in the wards, while over 35,000 out-patients and casualties had received advice and medicine. His lordship referred to the special claims which the hospital had upon public sympathy and support in that admission to its benefits was absolutely free, also that it had been the first general hospital to appoint a trained almoner to see the applicants for relief, and that it afforded opportunities for clinical instruction to women medical students. Mr. Charles Burt, the chairman of the weekly board, stated that in order to provide better accommodation for the nursing staff it was proposed to build a fourth storey over the side portions of the rear central block, the cost of which is estimated to be not less than £5000. In view of the pressing claims now being made upon the public in connexion with the war in South Africa the committee must rely upon the generous assistance of the friends of the charity to provide the necessary funds, not only for these much-needed improvements but also for the maintenance of the work of the hospital. Mrs. Scharlieb, M.D. Lond., moved a resolution expressing the thanks of the governors to Mrs. Webb and other friends for their generous gift of a new museum and bacteriological laboratories which had been erected as a memorial of the late Miss Mabel Webb, M B. Lond., formerly curator of the museum. At the close of the proceedings Lady Reay, C.I., formally opened the new museum.

SCOTTISH NATIONAL RED CROSS HOSPITAL.—A public meeting was held on March 2nd in the Merchants' Hall, Glasgow, for the purpose of promoting the Red Cross scheme of the St. Andrew's Ambulance Association for establishing a Red Cross Base Hospital in South Africa. The Lord Provost presided, and there was a large and influential attendance. Lord Overtoun, after moving "that this meeting approve of the formation of the Red Cross Branch of the St. Andrew's Ambulance Association for Aid to the Sick and Wounded in War," said that the association, which was founded in 1882 and received a Royal Charter in 1889, had two objects, one to help the suffering in time of peace and the other to aid the wounded in time of war. There was now a great field for a Red Cross department in connexion with the association. The Rev. Dr. McAdam Muir seconded the motion, which was carried unanimously. The Lord Provost moved "that this meeting cordially recommends to the sympathy and liberality of the people of Scotland the scheme for establishing at Cape Town or elsewhere in South Africa, as the military authorities may direct, a base hospital to be called the Scottish National Red Cross Hospital." The Corporation of Glasgow had offered the Ruchill Hospital for the reception of wounded men who might be sent home, but the superiority of a base hospital in South Africa over a hospital at home was evident, for it would be not only in a most exhilarating climate—to which, indeed, patients were sent from this country in order that they might recover—but the men would be saved from the discomforts of the voyage home and of being conveyed to the nearest hospital after they landed. As the result of an appeal made during the last few days £10,857 had been received. Sir Thomas G. Glen-Coats, Bart., seconded the motion, which, supported by General

Chapman and Professor Ramsay, was adopted. Sir William Laird moved, and it was resolved, that a committee be appointed to coöperate with the council of the association. On the motion of Dr. G. C. Beatson, chairman of the council of the association, a vote of thanks was awarded to the Lord Provost for presiding.

MEDICAL HIGH SHERIFF.—Dr. A. Garrod Thomas, J.P., of Clytha Park, Newport, Mon., has been appointed High Sheriff of Cardiganshire.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the request of the Secretary of State for War the President of the Royal College of Physicians of Ireland has nominated Mr. F. G. Fitzgerald, L.R.C.P. & S. Irel., to a commission in the Royal Army Medical Corps.

ANTI-VACCINATIONISTS AS VACCINATION OFFICERS.—At the meeting of the Liskeard Board of Guardians held on Feb. 24th Mr. Preston Thomas, of the Local Government Board, who attended the meeting, said that he did so at the express wish of Mr. Henry Chaplin, M.P., in reference to the refusal of the Local Government Board to sanction the appointment of an anti-vaccinationist as vaccination officer for the Collington district. After some discussion it was decided to agree to the wishes of the Local Government Board and to advertise for a vaccination officer for the district and that the words "no anti-vaccinationist need apply" should be added to the advertisement.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*The Lunacy Bill.*

SEVERAL amendments were made in the Lunacy Bill during its passage through Committee in the House of Lords and several subsections and new clauses were added. Among the additions are a provision that the judicial authority shall in his report to the Commissioners state definitely whether in his opinion the detention is or is not proper, and another to the effect that the power of two or more local authorities to agree to unite in providing and maintaining a district asylum shall be construed as including a power to unite in providing and maintaining a laboratory for pathological research in connexion with lunacy.

*The Cost of the Medical Establishment of the Army.*

The effects of the war are visible in almost every item of the estimates for the medical establishment of the army. The total vote for 1899–1900 was £305,800, whereas for 1900–1901 it is no less than £555,000. Under the head of pay, &c., of the Army Medical Service there is an increase of £41,300; of pay of civilian medical practitioners, &c., an increase of £120,600, the figures being £134,500 as against £13,900; of corps pay and extra duty pay of the Royal Army Medical Corps, nurses, clerks, and other subordinates, an increase of £36,300; and of cost of medicines, &c., an increase of £50,000. In his explanatory statement the Secretary of State said that all the available officers of the Royal Army Medical Corps ordinarily on the home establishment had been sent to South Africa and their places at home had been filled by the employment of retired officers and civil medical practitioners. In addition 223 civil surgeons had been sent to the seat of war. Provision, it was further said, had been made for a large increase of officers of the Royal Army Medical Corps, and a further addition had been made to the establishment of non-commissioned officers and men.

## HOUSE OF COMMONS.

THURSDAY, MARCH 1ST.

*Small-pox Precautions.*

MR. TATTON EGERTON asked the President of the Local Government Board whether his attention had been called to two cases of small-pox in London which had been distinctly traced to neglect of due precautions by the authorities at Hull; and what steps he intended to take in the matter to prevent similar cases of outbreak of small-pox.—MR. CHAPLIN: I have made inquiries with regard to this matter. It appears that the two men from whom the cases referred to are thought to have derived the infection were employed by a contractor in erecting additional buildings at the small-pox hospital at Hull. I am informed that it was desired by the Hull authorities that the men employed should be revaccinated before entering on this work. It was also arranged that the men should not be required to work within 60 feet of any building in which there were small-pox patients, but there is some conflict of testimony as to whether this arrangement was strictly observed. The only effective precaution that can be taken in cases of this kind is revaccination, and in the present instance gratuitous revaccination was offered to the men but unfortunately they declined to accept the offer.

*The Meat on Board the Transports.*

MR. BAIRD asked the Financial Secretary to the Admiralty (1) whether any reports had been received from officers commanding troops on board transports for South Africa on the quality of meat supplied to the troops; (2) whether on several occasions the meat had been condemned by the medical officer and thrown overboard in bulk, while that actually cooked had been found to be uneatable and had been treated in the same way; (3) whether any reports had been received from South Africa on the condition of some of the troops when landed to the effect that they had evidently been underfed on the voyage; and (4) whether steps had been taken to secure that the meat issued to the troops on board transports shall be of good quality and the provisions on sale cheap and plentiful.—MR. MACARTNEY: Reports have been received from officers commanding troops on board 60 transports victualled by the Admiralty. On seven transports the salt meat ration was condemned on different occasions and other rations were issued. Five commanding officers have reported that the troops disliked the salt beef rations because they were either too salt, or hard, or unpalatable. The answer to the third paragraph is in the negative. Every care has been taken to secure that the rations issued to the troops should be of the best quality, and in a few cases where complaints had been made that the prices of the canteen were high and the stock of articles sold there insufficient the attention of the owners has been called to these matters and they have been rectified. I may add that in the case of every ship where complaints were made the salt beef has been landed at the Cape and that the report of the board which has surveyed it is to the effect that it is quite satisfactory.—SIR JAMES FERGUSSON: Is it not the fact that in some of the transports the cases of salt beef were marked "1893"?—MR. MACARTNEY: No, sir, I have not had any report to that effect and I do not believe there is any foundation for the statement.—SIR JAMES FERGUSSON: I will give you proof.

FRIDAY, MARCH 2ND.

*Proposed Special Night Staff for Netley Hospital.*

Captain NORTON asked the Under-Secretary of State for War whether, seeing that non-commissioned officers and men of the Royal Army Medical Corps are on duty for long hours in attendance upon sick and wounded at the Royal Victoria Hospital, Netley, he would consider the advisability of organising a special staff of night orderlies, who would be excused day duty as in all large civil hospitals, in order that the sick or wounded might be at least as well attended to as the civilian patient.—MR. POWELL WILLIAMS: The question has been very carefully considered and in view of the number of experienced men of the Medical Staff Corps who have applied to re-enlist and by whose help the pressure will be greatly diminished it is not thought expedient to form the special staff suggested.

*The Meat on Board the Transports.*

SIR JAMES FERGUSSON asked the Financial Secretary to the Admiralty whether he had inquired into his statement that cases of salt beef marked "1893" were shipped for the rations of troops going to South Africa.—MR. MACARTNEY: 1842 pounds of beef of the date "1893" have been returned from the *Kildonan Castle*. I must therefore apologise to my right hon. friend for making a statement on the subject which was not correct. No beef of that date was supplied to any other transport from which complaints have been received. I made inquiries on that point by telegraph yesterday. The complaint that the beef was hard as regards the *Kildonan Castle* did not come from the commanding officer of the *Kildonan Castle*.

MONDAY, MARCH 5TH.

*Proposed Food Standards.*

Mr. HEDDERWICK asked the President of the Board of Agriculture whether any and what steps had been taken by the Board of Agriculture in exercise of the power conferred by Section 4 of the Sale of Food and Drugs Act, 1899, upon the Board, to set up presumptive standards of quality in respect of milk, cream, butter, and cheese.—MR. WALTER LONG: No regulations under the section referred to have as yet been made, but I have appointed a Departmental Committee, of which Lord Wenlock is chairman, to consider whether any such regulation can with advantage be made in respect of milk and cream, and upon the report of the committee the further action to be taken will to a great extent depend.

TUESDAY, MARCH 6TH.

*The Nursing Staff of the new Bethnal-green Infirmary.*

Sir MANCHERJEE BHOWNAGGREE asked the President of the Local Government Board whether the Board of Guardians of St. Matthew's, Bethnal-green, applied some months ago for sanction for the appointment and salaries of the nursing staff for the new Bethnal-green Infirmary, and that, although that institution was completed and ready to receive patients, and was formally opened yesterday, the sanction has not been accorded; and, if so, would he take immediate steps to comply with the request of the guardians.—Mr. CHAPLIN: The Local Government Board have received the application referred to and there has been considerable correspondence on the subject. The Board's decision in the matter has been communicated to the guardians. They have sanctioned the number of nurses required, and I hope that the matter may now be regarded as settled.

*Workhouse Dietary Scales.*

Mr. CHAPLIN, replying to a question by Mr. HAZELL, said he was sorry there had been delay in the issue of the regulations with regard to workhouse dietaries. The delay had been mainly caused by the great care which had been requisite in framing the model dietary scales which the Committee on the subject recommended should be issued. He was unable to name a date when the regulations would be ready, but they were being pressed forward and there would be no avoidable delay in their issue.

*The Inspection of Cows and Dairies.*

In their Bill now before the House of Commons the Corporation of Taunton seek power to inspect cows and dairies outside the limits of the borough, a power already enjoyed by other urban local authorities. After the Bill had been read a second time Mr. STRACHEY moved an instruction to the committee by whom the measure will have to be considered to provide that this power shall not be exercised without the previous order of two justices sitting in petty sessions who shall not grant the order unless they are satisfied that the local authority of the district in which the premises are situated has not a ready dealt with the case.—Sir WALTER FOSTER and other members opposed this instruction on the ground that its effect would be to hamper the corporation in its public health work and on a division it was rejected by 63 votes.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BEALE, H. R., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

BELFRAGE, S. H., M.B. Lond., has been re appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

BEVAN, A., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

BOURDAS, E. C., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

BROWN, W. L., M.A., M.B., B.C. Camb., has been appointed Casualty Physician to St. Bartholomew's Hospital, London.

CARTER, HORACE H. A., L.R.C.S. & L.R.C.P. Irel., has been appointed Assistant Medical Officer in the Colonial Service.

CLARKE, H. H. R., L.R.C.P., M.R.C.S., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

CLEMENTS, JOHN EDMUND, M.B., B.Ch., B.A.O., R.U.I., has been appointed Medical Officer to the Chinese Customs Service.

COUPLAND, SYDNEY, M.D. Lond., F.R.C.P., M.R.C.S., has been appointed Consulting Physician to the Middlesex Hospital.

CUNNINGHAM, J. F., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

DAVSON, FRANK ADAMS, M.D. & C.M. Aberd., M.R.C.S., J.P., has been appointed Honorary Medical Officer to the Dartmouth Cottage Hospital.

DUDGEON, L. S., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

ELLIS, F. H., B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

EVE, F. C., B.A., M.B., B.C. Cantab., has been appointed Assistant House Physician to St. Thomas's Hospital.

FAGGE, C. H., M.S., F.R.C.S., has been appointed Surgeon to the Out-patients of the Evelina Hospital for Sick Children, Southwark-bridge-road, London.

GATES, E. A., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

GRAHAM, J. C. W., B.A. Cantab., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

HAWKINS, C. L., B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

HEDLEY, E. W., M.A., M.B., B.C. Cantab., has been appointed Assistant House Physician to St. Thomas's Hospital.

HOWLETT, B. F., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

JARDINE, ROBERT, M.D. Edin., M.R.C.S., L.F.P.S. Glasg., has been appointed Examiner in Midwifery to the University of Glasgow.

JONES, A. WEBB, L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

KENDALL, WALTER BENDALL, M.R.C.S., L.R.C.P. Edin., has been appointed Honorary Medical Officer to the Dartmouth Cottage Hospital.

KILVERT, J. B., L.R.C.P., M.R.C.S., has been appointed Ophthalmic House Surgeon to St. Thomas's Hospital.

KINLOCH, R. B., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

LUCAS, S. A., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

MARTIN, A. E., B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

MICHELL, JOHN CHARLES, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health by the Lynton (Devon) Urban District Council.

PEARSON, C. Y., M.D. Irel., F.R.C.S. Eng., has been appointed to fill the Chair of Surgery in the Queen's College, Cork.

POWELL, Sir R. D., M.D. Lond., F.R.C.P., M.R.C.S., has been appointed Consulting Physician to the Middlesex Hospital.

RICHMOND, R. T. L.R.C.P. Lond., M.R.C.S. has been appointed House Surgeon to the Salisbury Infirmary.

SAUNDERS, EVERARD H., M.R.C.S., L.R.C.P. Edin., Fleet-Surgeon, having arrived home from the Cape in medical charge of 148 military sick and wounded and had them transferred to the Royal Military Hospital, Netley, has now taken over his appointment as Medical Officer of the training ship *Lion* at Devonport.

SHEEN, WILLIAM, M.D., M.S. Lond., F.R.C.S., L.R.C.P., has been appointed Surgeon on the Staff of the Imperial Yeomanry Field Hospital.

SPRIGGS, EDMUND IVENS, M.D. Lond., M.R.C.P. Lond., has been appointed Physician to the Surrey Dispensary, vice T. B. Partridge, resigned.

STEWART, G. I. T., M.A., M.B., C.M. Aberd., has been appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

TAKAKI, Y., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

THOMSON, J. STITT, M.D. St. And., F.R.C.P., F.R.C.S. Edin., has been appointed Physician to the Lincoln County Hospital, vice George Mitchinson, deceased.

UNSWORTH, N., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

WILLIAMS, W. G., M.B. Lond., has been appointed Assistant House Surgeon to the Cardiff Infirmary.

WORSLEY, RICHARD LE GEYT, M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Visiting Medical Officer to the Newcastle-upon-Tyne Dispensary.

YARROW, G. E., M.D., L.R.C.P. Lond., M.R.C.S., has been re-appointed Surgeon Accoucheur to the City of London Lying-in Hospital.

# Vacancies.

*For further Information regarding each vacancy reference should be made to the advertisement (see Index).*

ASTON UNION.—Resident Assistant Medical Officer at the Workhouse, Erdington, near Birmingham. Salary £130 per annum, rising annually by £10 to a maximum of £150, with furnished apartments, rations, washing, &c. Subject to statutory conditions.—Apply to the Clerk to the Guardians, Vauxhall-road, Birmingham.

BELGRAVE HOSPITAL FOR CHILDREN, 77, Gloucester-street, London.—House Surgeon for six months. Board and residence, with £5 allowance.

BIRKENHEAD BOROUGH HOSPITAL.—Visiting House Surgeon. Salary £75 a year, with board, lodging, and washing (no wine, spirits, or beer). Additional fees allowed for reporting certain infectious diseases, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BRADFORD ROYAL INFIRMARY.—House Surgeon, for twelve months, unmarried. Salary £110 per annum, with board and residence.

BURY INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and attendance.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments. Also Resident Medical Officer for three years. Salary £100 per annum, with board, washing, and furnished apartments.

COTSWOLD SANATORIUM FOR THE OPEN-AIR TREATMENT OF TUBERCULOSIS.—Assistant Medical Officer. Salary commencing at £120 a year and all found.—Apply to Dr. Pruen, Sherborne Lodge, Cheltenham.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £100 a year, with board and residence.

DEVON COUNTY ASYLUM, Exminster, Devon.—Third Assistant Medical Officer. Salary £120, rising to £150, with board, lodgings, &c.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. Salary £50 per annum, with board and washing. Also Assistant House Surgeon. Board and washing provided.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Medical Officer for the Casualty Department for six months. Salary at the rate of £100 per annum. Luncheon is provided at the Hospital.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £50, with apartments and board.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Junior House Surgeon for six months. Salary at the rate of £50 per annum, with board, lodging, and washing in the hospital.

HAMLET OF MILE-END OLD TOWN, London.—Assistant Resident Medical Officer at the Workhouse Infirmary, Bancroft-road, Mile-end, E. Also as Assistant Medical Officer for the Workhouse and School, unmarried. Salary, an inclusive one of £120, with board, lodging, and laundry and an allowance in lieu of beer. Applications to the Clerk to the Guardians, Bancroft-road, Mile-end, E.

HANTS COUNTY ASYLUM, Fareham.—Third Assistant Medical Officer, unmarried. Salary £125 per annum (increasing to £150 after twelve months' service), with furnished apartments, board, washing, and attendance.

HARRIS PARISH COUNCIL, FOR THE SOUTHERN DIVISION OF HARRIS.—Medical Officer. Salary £90. Apply to Mr. Thomas Wilson, Solicitor, Lochmaddy, Clerk.

HARTLEPOOLS HOSPITAL, Hartlepool.—House Surgeon. Salary £80 per annum, with board, lodging, and washing in the hospital.

HEIGHAM HALL, Norwich.—Assistant Medical Officer for the above private asylum.

HEREFORD GENERAL INFIRMARY, Hereford.—Senior House Surgeon, for six months, unmarried. Salary £40, with furnished rooms, board, washing, gas, coals, and attendance. Also Junior House Surgeon, for six months, unmarried. Salary £17 10s., with furnished rooms, board, washing, gas, coals, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Assistant Physician.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the hospital.

KENT AND CANTERBURY HOSPITAL, Canterbury.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

LINCOLN COUNTY HOSPITAL, Lincoln.—Assistant House Surgeon for six months. Honorarium £10 for that period, with board, residence, and washing.

LIVERPOOL DISPENSARIES, Moorfields, Liverpool.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LONDON TEMPERANCE HOSPITAL.—Physician to out-patients. Honorarium 50 guineas per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the institution.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Honorary Surgeon.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary for House Physician and House Surgeon at the rate of £40 a year each. Salary of Assistant House Physician and Assistant House Surgeon at the rate of £20 a year each.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence. No stimulants provided.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, London.—Senior Resident Medical Officer for twelve months. Salary £100 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, London.—Resident Medical Officer for twelve months. Salary £70 per annum, rations, and laundry.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with furnished apartments, board, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor.—Clinical Assistant. Board, residence, and laundry provided. Apply to the Resident Medical Officer. Also Resident Medical Officer, unmarried. Salary £150 per annum, with board and lodging in the hospital. Apply to the Secretary to the Medical Committee, at the Hospital, Ventnor.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—House Surgeon. Salary £80 a year, with board, residence, and laundry. Also Assistant House Surgeon, £30 a year, with board, residence, and laundry.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board, lodging and washing.

SHEFFIELD ROYAL HOSPITAL.—Junior Assistant House Surgeon, unmarried. Salary £50 per annum, with board (no wine or beer), lodging and washing.

SOUTH LAMBETH, STOCKWELL, AND NORTH BRIXTON DISPENSARY, Wilkinson-street, Albert-square, Clapham-road, S.W.—Vacancy on Visiting Medical Staff.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY, Stamford.—House Surgeon, for two years, unmarried. Salary £100 per annum, with board, lodging, and washing.

ST. MARY'S HOSPITAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary £100 to £150.

ST. OLAVE'S UNION.—Medical Officer for the Workhouse, Parish-street, Tooley-street, S.E. Salary £70 per annum, with extra fees. Subject to statutory conditions. Applications to the Clerk to the Guardians, Tooley-street, London.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £70 per annum, with board, washing, and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice that the following appointments as Certifying Surgeons under the Factory Acts are vacant—namely, at Thrapston in the county of Northampton, at Kilworth in the county of Cork, at Fallcarragh in the county of Donegal, at Witley in the county of Surrey, at Bandon in the county of Cork, at Yaxley in the county of Northampton, at Biggar in the county of Lanark, at Eddenderry in King's County, at Aberdare in the county of Glamorgan, and at Snodland in the county of Kent.

THE SECRETARY OF STATE FOR THE HOME DEPARTMENT gives notice that the appointment of Medical Referee under "The Workmen's Compensation Act, 1897," for the Worksop and Mansfield County Court Districts in Circuit No. 18 is vacant.

UNIVERSITY OF LONDON.—Examiners.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon.—Salary £60 per annum, with board, &c.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, washing, and attendance.

# Births, Marriages, and Deaths.

## BIRTHS.

GUEST.—On Feb. 17th, at Dorrington, Salop, the wife of Herbert M. Guest, L.R.C.P. Lond., M.R.C.S., of a son.

HINDE.—On March 1st, at The Steyne, Worthing, the wife of Frank Hinde, M.D., of a son.

HOOLEY.—On March 4th, at Broxmore, Cobham, Surrey, the wife of Arthur Hooley, L.R.C.P. Edin., M.R.C.S., of a daughter.

## MARRIAGE.

PAKES—FISHER.—On March 1st, at St. Andrew's, Fulham, by the Rev. Charles Pakes, B.A., Vicar of Copp, Garstang, father of the bridegroom, assisted by the Rev. J. S. Skinner, B.A., brother-in-law of the bride, Walter Charles Cross Pakes, L.R.C.P., D.P.H., to Dora Agnes, youngest daughter of the late John Fisher, Esq., of Leckonby, Gt. Eccleston, Lancs.

## DEATHS.

GUY.—On March 2nd, at Shoebury Villa, Dover, Thomas Guy, M.D., F.R.C.P., Inspector-General of Army Hospitals, retired, in his 81st year.

HERON WATSON.—On Feb. 27th, at Gotha, Germany, Elizabeth Gordon Miller, wife of Patrick Heron Watson, LL.D., M.D., F.R.S., F.R.C.S.E. & I., Surgeon-in-Ordinary to the Queen in Scotland, and daughter of the late James Miller, F.R.S., F.R.C.S., Professor of Surgery in the University of Edinburgh, and Surgeon-in-Ordinary to the Queen in Scotland.

SIMSON.—On March 2nd, Francis Taylor Simson, L.R.C.P., L.S.A., of Montague-place and Craven House, Northumberland-avenue, W., aged 40.

WEARING.—On March 2nd, at Mayfield, Victoria Park, Wavertree, Liverpool, Richard Wearing, M.D., aged 46 years.

WHISTLER.—On Feb. 27th, at his residence, 6a, Bickenhall-mansions, Gloucester-place, London, William McNeill Whistler, M.D. Pennsyl., M.R.C.P. Lond., M.R.C.S. Eng., late Surgeon to the Confederate States Army, U.S.A., aged 63. (American papers please copy.)

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE BRITISH VIAVI COMPANY.

ON Feb. 27th the coroner for East Sussex opened an inquiry into the circumstances attending the death of Elizabeth Mary Lake, aged 42 years, who died on Feb. 25th. Mr. Percy Lake, the husband of the deceased, said that his wife had had no medical attendance, but had been to see Miss O'Dowda until within a few days of her death, when Miss O'Dowda had come to the house by his request. In reply to the coroner witness said that Miss O'Dowda was the agent to the British Viavi Company. His wife had adopted the Viavi treatment in March last year. Miss O'Dowda, examined by the coroner, is either in reality, or poses as, an ignorant woman. She said that she was a branch house manager for the British Viavi Company. Asked "what is the Viavi Company"? she said that she did not understand the question. Further pressed she said it was a company for health treatment at home. Her business was to give instructions with regard to the remedies to people who wished to buy them, to advise them as to their application, and to put them in touch with the hygienic department in London, which was controlled by a medical adviser, where they are treated by correspondence from London. She did not give medical advice but only instructions as to the application of the remedies. Mrs. Lake had described her symptoms and witness considered that she was suffering from a "tumorous condition of the bowels," and therefore advised the use of the medicine recommended by the company for that complaint. The medicines were composed of vegetable substances, but she did not know what they were. The price of the ointment, tablets, bottle of liquid, and capsules was 36*s.*—that is to say, that for each preparation the sum of 36*s.* was charged. Witness had no medical qualification and had no idea that deceased was going to die. Witness had been trained as a Viavi worker under Miss Glassford. She had offered no objection when Mr. Lake wished to call in a medical man. They worked hand-in-hand with all medical men. They sent for one when necessary. In answer to the coroner, however, Miss O'Dowda confessed that when they had sent for a medical man he would not work with them.—Dr. Alexander Harper, a registered medical practitioner who had been called in at the end and who had found Mrs. Lake dead on his arrival said that he had made a post-mortem examination. The cause o death was perforation of an ulcer high up in the small intestine. He did not think that a diagnosis of its existence could have been made with certainty during life even by a qualified medical man, but its existence would certainly have been suspected. It was probable that the ulcer had existed in March, 1899, when Miss O'Dowda first saw the deceased. Henry Thomas Woodward, describing himself as M.D. of the University of Pennsylvania, said that he was connected with the company in the hygiene department in London. His business was to look over the correspondence from patients and to return answers. Asked by the coroner if he had any objection to telling the court the ingredients of the medicines witness replied that he had no objection but that he did not know. The coroner in his summing up pointed out that Dr. Harper had stated that the complaint from which the deceased had suffered would possibly not have been diagnosed by a skilled medical man. Therefore he did not think that they could say that death was accelerated by incompetence on the part of Miss O'Dowda. The jury handed in the following verdict: "We wish to return a verdict of 'Death from natural causes.' We also think that the life of the deceased might have been prolonged had she been placed under properly qualified medical treatment, and from the evidence brought before us we consider the Viavi Company a fraud."

There is nothing to quarrel with in this verdict. There is no law and there never can be one which will prevent persons tampering with their own health by drugging themselves with nostrums which they buy on the faith of harrowing tales inserted as advertisements, or by dealing with quacks, as was the case of Mrs. Lake. Here is a commercial company employing a "medical" adviser who admits his complete ignorance of the composition of the drugs on which he advises, and employing an agent who also confesses her ignorance. We have seen from time to time the literature sent out by the British Viavi Company, and as a matter of course it appeals largely to that unhappy class of persons who are always imagining that something is wrong with their sexual apparatus. The company practises quackery of the worst description, and a coroner's jury have said that they consider the company a fraud. The case is one more argument for some measures to be taken for the suppression of quackery.

Our readers may notice that the "medical" adviser of the company styled himself an M.D. of the University of Pennsylvania. This university, whose seat is in Philadelphia, has a good record for work extending over 135 years and must not be confounded with the fraudulent Philadelphia University. If "Dr." H. T. Woodward really graduated in the University of Pennsylvania we trust that his *alma mater* will take notice of his proceedings.

## MEDICAL CERTIFICATES FOR THE USE OF THE SCHOOL BOARDS.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of March 3rd I read a note on the London School Board and Medical Certificates. I have had some trouble with the School Board here on the same subject and have successfully combated their inspectors. I have always refused to give any kind of certificate unless the board would pay fees for them. This, of course, they would not do. I therefore told parents of children not to send them to school but to tell the inspectors that if they summoned them I should go and give evidence. This stopped the trouble for a time, but at last, after some preliminary nibbling in the shape of threats and abuse of the parents, they issued a summons. I attended and gave evidence and the case was dismissed. They soon summoned another case, thinking to tire me of attendance at the police-court. On this occasion I refrained from attending, but sent a note explaining the circumstances to the chairman of the bench. The plan answered here where we all know one another, but probably would not be sufficient in London. I have had no further trouble in the matter. If I hear any complaints of abuse of parents I send my compliments to the inspector inviting him to issue a summons as he knows perfectly well what my action will be in that case. I may add that largely in consequence of this action by myself and another member of our infirmary staff the School Board have appointed a medical officer with whom our relations are perfectly satisfactory.

I am, Sirs, yours faithfully,

Friar Gate, Derby, March 5th, 1900. G. H. MILNES, M.D. Cantab.

## "A CASE OF INTRACTABLE ULCER."

*To the Editors of* THE LANCET.

SIRS,—In answer to "Tibia" in THE LANCET of March 3rd, the following case may be of interest. A woman, aged 50 years, of feeble health and addicted to alcohol, suffered for 14 years from a large deep ulcer on the inner side of the tibia. It was surrounded by discoloured skin but no varicose veins were apparent. Strapping, rest, mercury, and iodide of potassium only made matters worse, but on the administration of quinine and digitalis the ulcer rapidly improved and within one month was completely healed. The administration of arterial tonics, such as digitalis, in cases of feeble habit and poor circulation is most important and is often attended by surprising results in ulcers, varicose veins, and dermatitis hæmostatica.

I am, Sirs, yours faithfully,

March 6th, 1900. TONIC.

## THE DOOR-PLATE OF AN OLD MEMBER OF A FIRM.

*To the Editors of* THE LANCET.

SIRS,—Will you kindly give me advice on the following circumstances? An old practitioner called A died over three years ago, his widow sold the practice, left the town, and has no further interest in it except the rent of the house in which A had lived. The practice was bought by B, who after a short time sold it to C, and C has now taken a partner, D. Three years before A's death, A 2 (same name) who was working with him, commenced to practise independently, and is still in practice in the town. C and D still retain A's name on their door-plate, to the annoyance of A 2, who is the only person of that name in the town. Can A 2 compel C and D to discontinue the use of his name?

I am, Sirs, yours faithfully,

March 5th, 1900. A 2.

*** As A has been dead three years and as A 2 has resided six years in the town we think A's name might be removed from the door belonging to C and D.—ED. L.

## A METHOD OF TREATING VESICO-VAGINAL FISTULA.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET there was published, I believe, some years ago, the description of an operation for vesico-vaginal fistula, in which operation one or two silk threads are brought out of the urethra. I cannot find a reference to it in "Neale's Digest," perhaps because my copy is not the latest edition. Can any of your readers tell me where the article appeared, whether in THE LANCET or elsewhere, and if they have any experience of this operation? It seemed to me that, in the hands of a not very expert or experienced operator, the good result was more certain than by the other methods.

I am, Sirs, yours faithfully,

J. DICKSON HUNTER, M.D. Edin, &c.

Arequipa, Peru, Jan. 26th, 1900.

## WHO SHOULD PAY?

*To the Editors of* THE LANCET.

SIRS,—About 12 months ago I was called to a man who was injured underground. He was working in an old working that had not been used for many years making an air way when a stone fell on his leg, breaking it. The fracture was comminuted. Those who went to his aid had a good deal of difficulty in getting to him and in getting him out. He had to pull himself up by his hands and elbows through some narrow parts, for the place had closed in so that there was barely room to crawl. The colliers who went to get him out say it was a most dangerous place. I sent a bill for medical attendance upon him for £15 15s. to the company he was working for. They refused to pay it, as they said it had nothing to do with them. hey have no medical man for their workmen, but they only employ a very few. They paid the injured man compensation, 13s., but of course he could not pay my bill as he could not work for 12 months. He could never have got out of the mine without having his leg attended to, and medical attention probably saved the company a good many pounds for without it he would have had to have his leg amputated.

I am, Sirs, yours faithfully,

March 5th, 1900. T. W. B.

*** The company, it seems to us, should recognise the claim of the medical man, but we do not suppose they can be legally compelled to do so. Our correspondent should consult a solicitor.—ED. L.

## PUBLIC FREE LIBRARIES AND HYGIENE.

A LETTER under the above heading appears in the *Greenock Telegraph* of March 3rd calling attention to the dangers in the way of disseminating infection which may arise from public libraries. The writer points out that special danger exists from the practice indulged in by some readers of spitting on their fingers before turning over the leaves. It is quite possible that a book might be infected with the bacillus of tubercle in this way, but the great danger arises from books being taken home to all sorts of places where they may come in contact with children suffering from measles, if not diphtheria or scarlet fever. We believe the subject has not escaped the notice of sanitary authorities, but books are difficult things to disinfect and the application of stringent rules for disinfection each time that a book was returned would be almost incompatible with the continued existence of the library. But as we said in THE LANCET of May 4th, 1889, p. 902, books that are known to have been exposed to the taint of disease should be disinfected and any further issue to the houses of those infected should be temporarily restricted.

## "THE CLERGYMAN AND THE MEDICAL MAN."

WITH reference to the paragraphs under this heading which appeared in THE LANCET of Feb. 17th (p. 509) and March 3rd (p. 667), a correspondent using the pseudonym of "Ajax" writes:—"The idea that two tablespoonfuls go to one ounce is still held by you, but I think that if you try you can easily pour one ounce into an ordinary tablespoon. I have found that most people and some practitioners are not aware of this. Of course, this has no reference to the dose of carbolic acid."

## THE TRANSVAAL BOERS: WHO AND WHAT THEY ARE.

"TRAVELLER" writes to us a long letter upon the above subject. We have not space for all his remarks, but we print the salient passages. "Having noticed in the papers lately the loose application of the terms Afrikander, Boers, and Dutch to our antagonists at the Cape I venture to surmise that their use has become too indiscriminate all round. The term 'Afrikander' was generally used to signify Dutch, French, or English born, bred, and resident in the Cape Colony proper. The term 'Boer' is generally used to designate people born and resident in the Transvaal or Orange Free State before the former was created from the latter. The two terms and peoples have now become entirely differentiated owing to the Boers beyond the Vaal River consisting of a mixed nationality of Dutch, French, Germans, Hebrews, Austrians, &c. The real Dutch of the Cape Colony proper were pre-eminently careful of family connexion and conservative of family history—attributes not yet belonging to the Boer communities of the present day in the Transvaal. The modern Boer has gradually developed into a new race of people of different pursuits, character, and nature from the old Dutch colonists of the Cape of 200 years ago. This speciality may be readily noticed by looking at the old Dutch figures in the pictures of Rubens, Teniers, or Van Eyck, &c., and the sketches of the Boer of the day in the illustrated papers. The Boer is now taller than the old stock—lanky, bony, and of austere visage, and a good horseman, whereas the old Dutchmen were square in figure, fleshy, rubicund in visage, and were good sailors and seamen."

## THE FRIEND OF HUMANITY.

IN a newspaper appears the following modest advertisement:—

"To the Deaf.—A gentleman who cured himself of deafness and noises in head after 14 years' suffering will gladly send full particulars of remedy on receipt of stamped addressed envelope.—J. Clifton, 12, Norfolk-street, Strand, London."

We can find no one in the Post Office Directory named J. Clifton at 12, Norfolk-street (Amberley House), Strand, but there is a person named Herbert Clifton at this address who deals in "Invisible Drum Supports." He also publishes pamphlets written in the most nauseous style of puffery running down his brother quacks. From this we learn that he has been deaf himself and knows the gloom that was in consequence cast over his life; he has been to these so-called specialists and suffered physically and financially from their nostrums and their charges; he has studied the physiology of the seat of his complaint, and, after patient study and experiment, submitted himself to a course of treatment which resulted in restoring to him once more the blessed power of hearing. He has also determined to give

to the world the benefit of the extensive studies and experiments which enabled him to succeed where so many others failed. Mr. Clifton evidently had a bad time. As a lad he suffered from noises in the head and his life became a burden (in large capitals). Nearly a dozen different surgeons saw him and "I realised the awful truth that deafness was certainly creeping upon me" (small capitals). Then he tried the various "quack remedies which have allured so many to their bitter cost." Then a wild yet happy thought flashed upon him and after patient research he mastered the intricacies of those important structures situated in the head and known as the "middle-ear" and "inner ear." Mr. Clifton wisely remarks that there is no need to give the technicalities of the subject in detail. We say *wisely* because a few lines further on he says that he commenced experimenting to find out the exact combinations of medicines to penetrate the "inner ear" and to restore the little muscles ("ossicles") to their natural state. A man who calls a muscle an ossicle has not profited much by "patient research."

### THE TROUBLES OF A PUBLIC VACCINATOR.

AT the annual dinner of the Bolton Poor-law Officers' Association on Feb. 20th a song entitled "The Public Vaccinator" setting forth the trials of those officials under the new Act was sung. The words were written by Dr. John Johnston and give a vivid picture of the troubles of the post. Three of the stanzas run as follows:—

"The announcement that he only vaccinated 'from the calf'
Would sometimes the occasion be of merriment and chaff.
One woman would declare the thought of vaccination shocked her,
While another one would tell him she preferred the 'Sixpenny Doctor.'

"When asked—'Heaw mony marks d'ye make?'—and he confessed to 'four,'
The mother oft with promptitude would show him to the door;
'The vaccination's free,' he'd urge, 'with lymph of the L.G.B.,'
'Aw'st ha' nowt at a' to do,' she'd snap, 'wi' oather it or thee.'

"Postponement would another urge, 'cos th' chilt's noan raley fit.'
He'd call again to find it done by 'Sixpenny' or 'fit.'
Another would deny herself, and in no dulcet tones,
Declare he'd made a great mistake—*she* wasn't Mrs. Jones."

### POPULAR MEDICINE.

WE have received a copy of *Leach's Family Dressmaker* for February. The journal is published monthly and its circulation is, we believe, a large one. The proprietors think it right to insert medical dvice, obviously given without the prescriber seeing the patient, s well as objectionable advertisements. Some of the latter, as will be seen, are disgraceful. On p. 12 we find the following answer to a question by a correspondent who gives the eminently appropriate *nom de plume* of "Stupid": "Try equal parts of lemon juice and lime water to the patches and if not eradicated in a few weeks send 2s. 6d. for the preparation for bleaching moles which leaves no scar." "Editress," who answers "Stupid," warns her against using "acetic acid, which requires great care in applying through a small glass tube." We, for our part, warn "Stupid" against the half-crown preparation, and generally against applying to popular papers for advice about her complexion. But certain advertisements in *Leach's Family Dressmaker* require serious comment. We note the advertisement on p. 25 of "Martin's Apiol and Steel Pills (for ladies)—a French remedy for all irregularities." On the same page Mr. Towle says of his pennyroyal and steel pills for females that they quickly correct "all irregularities, remove all obstructions, and relieve the distressing symptoms so prevalent with the sex." Also, on the same page, is an advertisement from a lady dwelling at 10, Bookseller's-row, Strand, W.C., who gives away "words of wisdom for our wives." The advertiser will also send post free illustrated lists of rubber appliances, preventatives, &c. The worst advertisement is that upon p. 23. It is dated from 145, Stockwell-road, London, S.W. Applications are to be addressed to Mrs. F. D. This is the address from which Mrs. B. B. F. Allen, Mrs. M., Owen, or the Irristum Company, were wont to issue their circulars. In THE LANCET of Dec. 24th, 1898, p. 1723, we commented upon the advertisements of this protean person, and as we notice that "Mrs. W." now expresses to Mrs. F. D. her relief that "her anxiety and misery was over" that she formerly expressed to Mrs. Allen and the others, we conclude that Mrs. F. D. is a fourth name for this firm. Mrs. W.'s testimonial implies that she had a miscarriage and the advertisement is, as the jury found in Owen *v.* Greenberg, immoral. There is another advertisement of a very shady type upon p. 3 of the cover. It relates to "not a dangerous drug, but a wonderful secret invention, never fails." This is addressed "To Married Ladies." With reference to the advertisement of Mrs. F. D. we would direct the attention of the proprietor of Leach's publications to Mr. Justice Darling's dictum in the "Madame Frain" trial "that the newspapers who put in advertisements of this kind now had a warning and that if they continued to do so they might find themselves in the same position as the defendants who were here."

INTERROGATOR would like to hear of a home (private) where a mentally deficient girl, aged 19 years, could be received and not only educated but taught an occupation.

*Assistant.*—1. Unless the matter is dealt with specifically in the agreement it is one that must be mutually arranged between the principal and assistant. There can be no actual right or wrong about it. 2. The work detailed seems to us enormous for one man to do, but if the assistant has agreed to do it and cannot allege that he has been deceived in any way as to the amount to be done, we can only advise him to do his best. 3. To break a signed agreement would be a serious course which we could not take upon ourselves to recommend. Our correspondent should consult his solicitor.

*A.M.C.* is advised to consult about the book those who superintended her training. No offers would be made for the papers in question which only have value when the issues are old and out of print.

*C. T.*—We do not print the addresses of medical men. They can be found in the Medical Register and Medical Directory.

*W. S.*—The spraying of the throat with local disinfectants has been tried. The results are not conclusive.

*Dr. J. Dysart McCaw.*—We have received over 1000 letters on the subject. All will have consideration.

*W. G.* is thanked for bringing the amusing passage to our notice.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, March 8th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Mar. 2 | 30·24 | N.E. | 0·01 | 60 | 44 | 36 | 38 | 39 | Raining |
| ,, 3 | 30·17 | N. | 0·03 | 54 | 45 | 39 | 39 | 41 | Overcast |
| ,, 4 | 30·13 | N.E. | ... | 79 | 42 | 36 | 36 | 38 | Cloudy |
| ,, 5 | 30·14 | N.E. | ... | 67 | 42 | 37 | 37 | 38 | Cloudy |
| ,, 6 | 30·26 | N.E. | 0·01 | 49 | 42 | 38 | 38 | 40 | Overcast |
| ,, 7 | 30·25 | N.E. | ... | 54 | 44 | 36 | 36 | 39 | Overcast |
| ,, 8 | 30·23 | N.E. | ... | 47 | 43 | 37 | 37 | 41 | Overcast |

**During the week marked copies of the following newspapers have been received:** *Yarmouth Advertiser, Scarborough Gazette, Dundee Advertiser, Bridgwater Independent, Western Morning News, West Ham Guardian, Southampton Times, Pioneer Mail, Times of India, Westminster Gazette, Scotsman, New York Sun, Pontefract Weekly Herald, Birkenhead News, Burnley Gazette, Surrey Times, Citizen, Architect, Builder, Sussex Advertiser, Wigan Observer, Ken Messenger, Cornish Post, Hastings and St. Leonards Weekly Mail, Hereford Times, Surrey Mirror, Herne Bay Argus, Jersey Express, Morning Herald, South Wales Gazette, Lancashire Daily Post, Kentish Observer, Lincoln Gazette, Western Gazette (Yeovil), Bradford Observer, Birmingham Daily Post, Harrogate Herald, Cornishman, Hackney Express, South London Chronicle, Glasgow Herald, Richmond Times, Sanitary Record, Brighton Gazette, Local Government Chronicle, Mining Journal, Reading Mercury, City Press, Public Health, Hertfordshire Mercury, Local Government Journal, Surrey Advertiser, Guy's Hospital Gazette, North Cheshire Herald, Fish Trades Gazette, South Durham Mercury, Auckland Chronicle, Huddersfield Chronicle, Indian Daily News, Southport Visitor, Bolton Evening News, Derby Daily Telegraph, Le Courrier de la Presse, Greenock Telegraph, South Wales Argus, Sheffield Daily Telegraph, &c., &c.*

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (12th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (13th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (14th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.) Cancer (2 P.M.)

**THURSDAY (15th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (16th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

**SATURDAY (17th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**MONDAY (12th).**—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. P. J. Freyer: A New Method of Performing Perineal Prostatectomy.—Mr. C. B. Keetley: Coxa Vara (with cases, skiagrams, and photographs).—Dr. C. Pope: 23 Years' Death Certificates in General Practice.

**TUESDAY (13th).**—CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Dr. G. E. Shuttleworth: The Training of Defective Children under School Boards.

CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Annual Clinical Debate. Subject:—The Treatment of Rheumatism with special reference to Prophylaxis and Cardiac Complications (opened by Dr. W. Ewart). The following speakers have promised to take part in the discussion:—Dr. T. J. Maclagan, Dr. A. E. Sansom, Dr. D. Hood, Dr. D. B. Lees, and Dr. A. Garrod.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Mr. E. M. Holmes: Notes on the Commerce of Drugs.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. H. Thursfield: The Skin Affections met with in Bright's Disease.

**WEDNESDAY (14th).**—HUNTERIAN SOCIETY (Theatre of the London Institute, Finsbury-circus).—8.30 P.M. Pathological Specimens will be shown.

**THURSDAY (15th).**—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—Clinical Evening. The following Cases will be shown:—Dr. H. Tilley: Cholesteatomata of Mastoid.—Mr. F. Jaffrey: Urticaria Pigmentosa.—Dr. W. Harris: Progressive Muscular Atrophy.—Dr. L. Guthrie: Cerebellar Tumour.—Dr. H. J. Macevoy: Little's Disease. And other Cases.

**FRIDAY (16th).**—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper: Dr. Robinson: Measles, its Distribution and Control.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (12th).**—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. C. Stewart: On the Protection and Nourishment of the Young in Plants and Animals.

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Mr. Waggett: Treatment of Diseases of the Accessory Sinuses of the Nose. (Post-Graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. Fox: Consultation. (Skin.)

**TUESDAY (13th).**—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. J. Waldo: Summer Diarrhœa with special relation to Causation and Treatment. (Milroy Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. M. Ord: Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. R. Russell: Cerebellar Localisation.

**WEDNESDAY (14th).**—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. C. Stewart: On the Protection and Nourishment of the Young in Plants and Animals.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. R. Saundby: Clinical Lecture:—Non-diabetic Glycosuria.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Mr. Godlee: On some peculiar Cases of Empyema.

THE SANITARY INSTITUTE, (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on Experimental Bacterial Treatment of the London Sewage (to be opened by Prof. Frank Clowes).

**THURSDAY (15th).**—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. J. Waldo: Summer Diarrhœa with special relation to Causation and Prevention. (Milroy Lecture.)

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—5 P.M. Clinical Demonstration:—Dr. T. D. Savill: Electricity in the Diagnosis and Treatment of Diseases of the Nervous System.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Colman: Demonstration of Selected Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Hunter: Pathological Demonstration. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. H. Low: Class. Roentgen Rays. Demonstration II. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

**FRIDAY (16th).**—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. C. Stewart: On the Protection and Nourishment of the Young in Plants and Animals.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. Tilley: Consultation. (Eye, Ear, Nose and Throat.)

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# MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume, were given in THE LANCET of Jan. 6th.

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